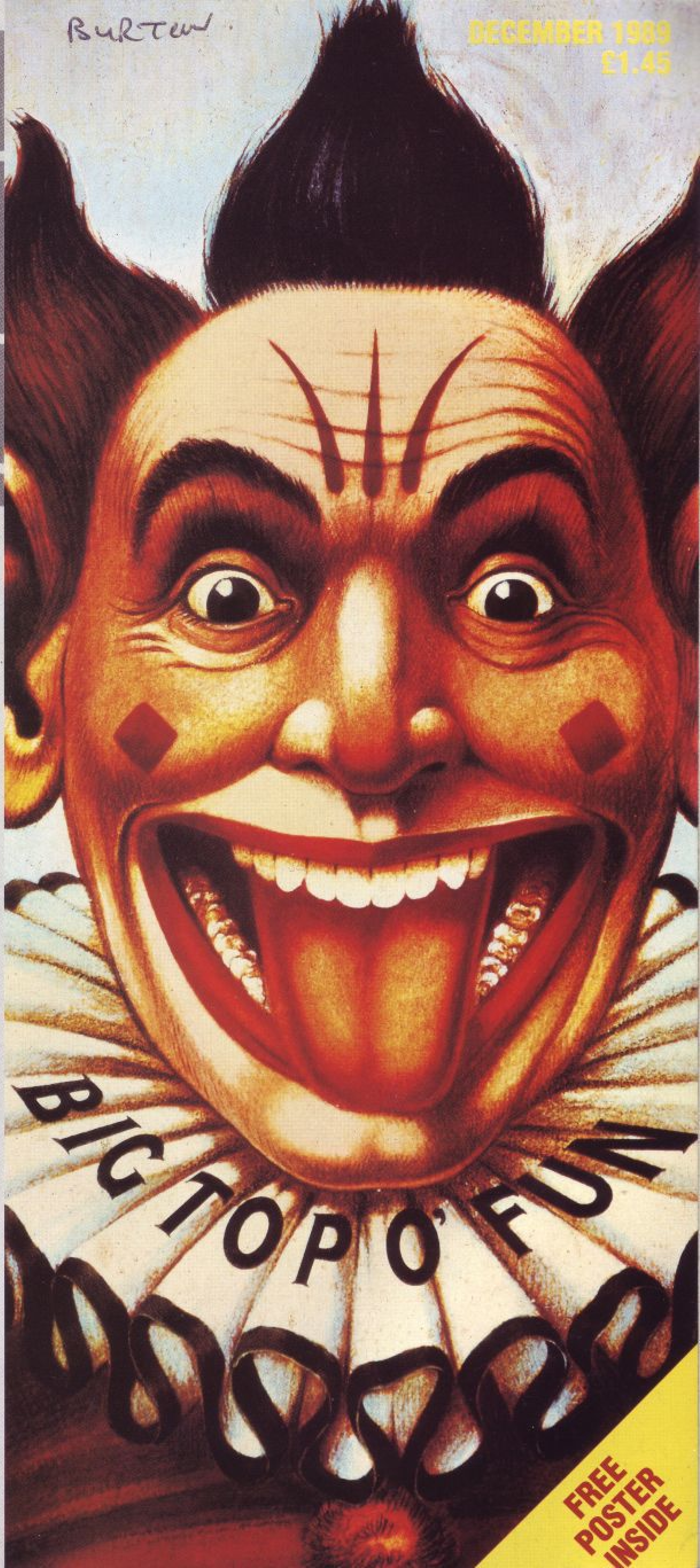
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AMSTRAD COMPUTER USER

THE OFFICIAL AMSTRAD CPC MAGAZINE



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ACTIVISION INVESTIGATED, SOFTWARE REVIEWED AND FURTHER FRACTAL FUN

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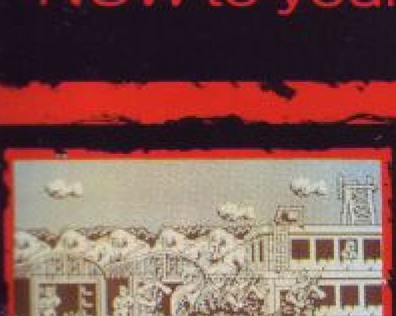
THE ACU TEAM IN FULL EFFECT

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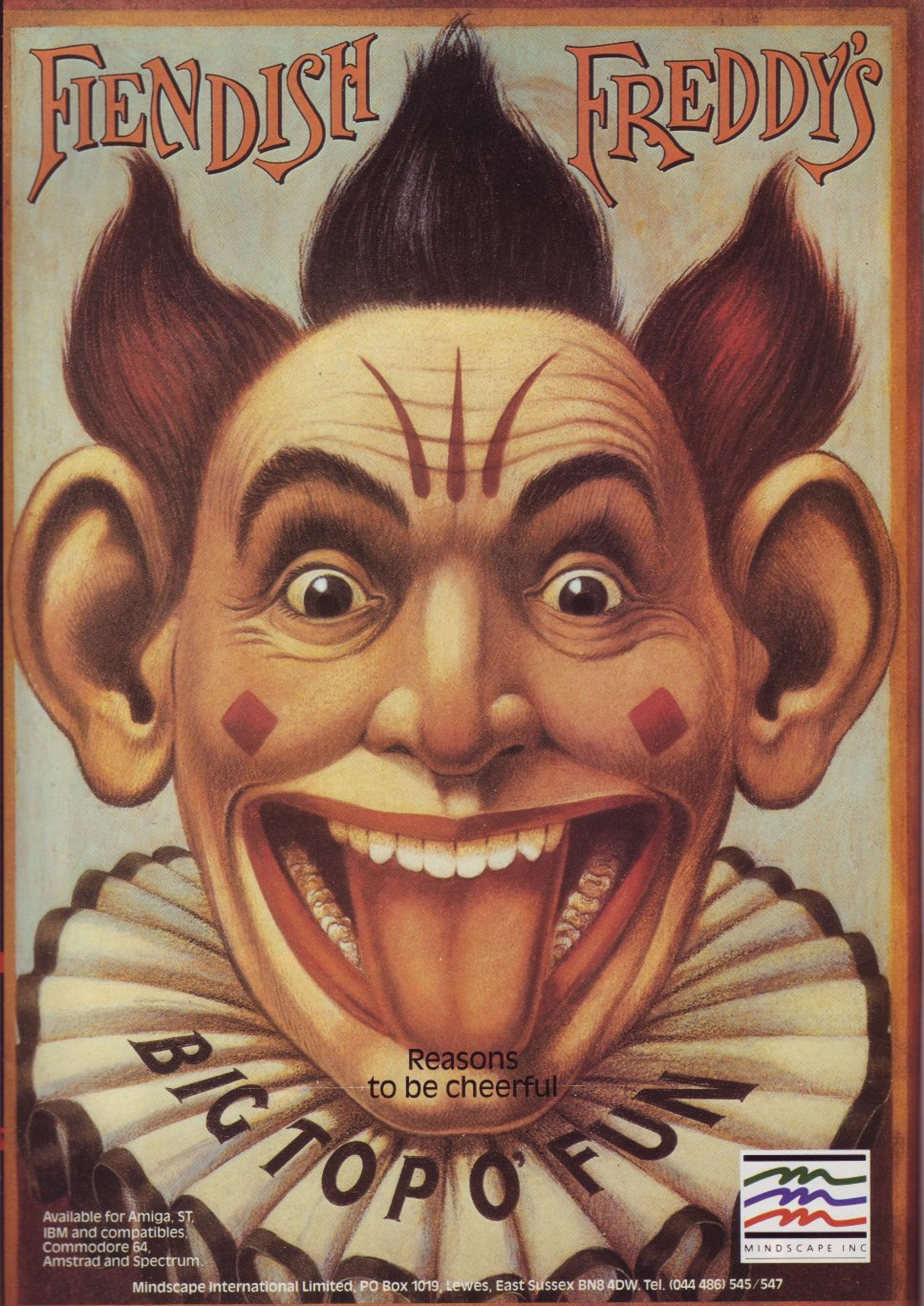






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REGULARS

FEATURES

LETTERS



What's the game?

As a regular reader of *ACU*, which is delivered by my newsagent each month, I find the magazine very interesting from cover to cover and one of the best on the market; but alas there is one let-down with ACU – no complete free games on the cover . . .

The Spectrum and Sinclair monthly magazines are always giving away free complete games to their readers.

I expect ACU readers would welcome a free game from time to time; the last time I can recall a freebie was with the last copy of *CPC* before it merged with ACU.

Come on, be a sport and give us a treat now and again.

Ardent ACU Reader
Ralph L. Maxwell-Wilson,
Brighton,
Sussex.

ACU: Funny you should mention it, but we are currently working on just such an idea. No one gets away with calling us ungenerous.

Compatibility

I recently purchased an Amstrad DMP2160 printer, I have had no trouble from it since. I was wondering if it is possible to connect it to my Olivetti PC, (IBM equivalent). It has both parallel and serial 25 pin interfaces. As I already have an Olivetti daisy-wheel printer, but I would like to print out graphics. I understand Maplin Electronics do a 25 to 36 pin cable, but I am not sure this would fit to the printer. Please help!!

Mark Rogers,
Felixstowe,
Suffolk.

ACU: The parallel Centronics interface is very much an industry standard on nearly all computers. This means that you can take your printer across to your new system and providing you have the correct printer driver you should have no problems.

School's in

I have a 20-year-old mentally handicapped (Downs Syndrome) son, Andrew, who attends a local authority training centre. Whilst his social skills have been well developed, his academic achievements have been, not surprisingly, less significant.

He has recently been offered a place at the local college of technology on a special reading course, which, if successful, will be enormously beneficial to him. I understand that amongst the teaching aids will be specially prepared computer programs.

Andrew has use, at home, of a CPC 6128 computer, which he handles very efficiently. Whilst I understand that the availability of programs for this particular model is fairly limited, I should be grateful if you could advise me as to whether there might be any suitable educational programs which may assist with his reading course, or alternatively advise me about which computer model might be best suited to this particular requirement.

Thanking you in anticipation of your help.

A.R. Hoof,
Horsehay, Telford,
Shorpshire.

ACU: A number of companies produce educational software for the CPC. Here are just a few. TMC (0602) 483440, School Software (010) 353 61, LCL (0491) 579345 49477, and Database (0625) 878888.

The lad done brilliant

I have just received the October issue of *Amstrad Computer User* and would like to mention what a great improvement it is on previous issues. The April issue was undoubtedly the worst I have seen of your publication, which I use with my Amstrad CPC6128. Carlo Jolly MA (last editor) was better, but the October issue, edited by Guy Matthews was the best yet. The special offers page was finally introduced, which is a good idea, and the silly bar-chart review system was scrapped, with good old percentage marks back again. I would suggest that Guy Matthews remains the permanent editor, unlike the three editors in five months! I would also like to see comments after the marks in games reviews to explain why that mark was given, in good old *CPC Computing* style! Other than that, keep up the good work, and I shall be subscribing soon.

Paul McCormick,
Alton,
Hampshire.

ACU: Extensive forensic tests have proved this to be a genuine letter, although the harsher cynics at Avralite seem to think it a cunning forgery by the ACU editorial team. Whatever, it goes to prove the old adage – if you want it changed, then write and say so.

Avid from Devon

I am an avid reader of your magazine. I am only fourteen years old, but I am a keen programmer and adventurer. I find only a couple of faults with your magazine. These are that apart from 10-LINERS you have very little programs, such as games and utilities and I am very disappointed at this. Also, what has happened to the adventure column? It hasn't been in for months and I am getting worried. Please, please, please would you bring it back. If you bring back the adventure column and have more programs, this would make an already brilliant magazine into an even better one in my point of view.

Simon Moss,
Bideford,
N. Devon.

ACU: Lots of letters from keen adventurers requesting their own adventure column will be enough to convince us to start one – so let's hear from you.

Spaced out

Please help! Shortly after buying my Amstrad 6128 last Christmas the space bar and keyboard were damaged, not severely, but enough to be a nuisance. Please help me find a place to fix it as all the places I have tried have gone bankrupt, don't do CPCs, or don't answer.

Thomas Wilkins,
Solihull,
West Midlands.

ACU: Your best chance for a speedy repair is to try your local dealers. Many, if not able to do the repairs themselves, are in contact with local people who can. If you can keep the repairs local, you can more effectively hassle the people when they take forever.

Dorn again

At the risk of confusing Mr Carmichael, I suggest that he replace *Protext* in David Dorn's list by *Brunword* at £30. As well as a powerful word-processor this would give him a spelling checker and dictionary, something I regard as essential, together with a card-index system incorporating mail merge and label-printing facilities. Another possibility would be Brunning's *Infoscript*, which would give him Brunword and a powerful database that would seem from the reviews and advertisements to be able to meet his needs for a stock-control system. At £50 the cost would be much the same as Protext plus *SAS* and he would have the further advantage of an integrated package in which the database was linked directly to the word-processor.

M Catton,
Gosport.

Who's 10-liner?

Are you cheating your readers, or is Mark Crawford cheating you? His 10-Liners in the October issue of *ACU* were published in the March '89 issue under a different name. Who's a naughty boy then? Maybe you thought we wouldn't notice.

Mr T H Lynn,
Clayton,
Manchester.

ACU: The person responsible for this outrage has been tried, convicted and beaten senseless with a piece of fresh haddock. We apologise unreservedly to all those inconvenienced by this heinous oversight, for which we can offer no reasonable justification.

Which mouse?

I am writing to ask you if there is any possibility of getting any information on using a mouse on a CPC 464. I am going to buy one for mine but don't know which is the best one to get.

Bindi Goucher,
Mansfield,
Nottinghamshire.

ACU: You have a choice in the matter. Datel Electronics (0782 744707 or 744324 for sales and technical enquiries) sell a package consisting of the Genius mouse and the OCP Art Studio with interface and mat for £49.99. Alternatively you could purchase the AMX mouse from Database (0625 878888) or the Kempston mouse (0908 690018).

Routine enquiry

Having read *ACU* on and off for the past three years (customer loyalty and all that), I thought the time had come for me to act (Ta-da, fanfare, etc).

For the past few months I have been trying to create a library of machine code routines – until it occurred to me that there must be more routines out there. This view I'm sure is shared by some of your more advanced readers, for whom having to invent the wheel when someone else has already done so is a major annoyance. I for one am not the most amazing of programmers, but I can just about hold my own in programming circles. (Ever written a stock-control program in Pascal?).

To this end I thought it would be a nice idea if I said "Send me your machine code routines and I will collate them into libraries and release them to the world!" I would prefer to have the routines in a decipherable form (i.e. source code), and fully documented, as there is nothing worse than having to decrypt a bit of M/C written by someone else. The idea is that when I have a load of them, I put them in to various categories (sound, keyboard, graphics, disc, printer, screen, etc), and release them on a 3" disc fully documented and timed – so that the end user can make their choice based on length and speed.

So please send us your routines.

Andy Watt,
45 Plumer Road,
High Wycombe,
Bucks HP11 2SS.

In the club

My name is Michael and I am 13 years old. I have a CPC 6128 and I want to join the Amstrad Computer Users' Club and to get a monthly magazine which includes games, program listings and utilities.

Pukawy,
Poland.

ACU: The Amstrad Computer Users' Club can be contacted at the following address: Enterprise House, P.O. Box 10, Roper Street, Pallion Industrial Estate, Sunderland, SR4 6SN or Tel. 091 510 8787.



computer formats.



The famous 464.

Education in the post

Rickett Educational Media has taken the hassle out of locating the educational package of your choice. The company is running a mail order service which provides around 1,000 titles and an educational section listing 80 of the more popular titles.

Rickett Educational Media can be contacted at (0460) 57152.

Amstrad denies rumours

Amstrad has fiercely denied trade press rumours of the demise of the CPC 464. Stories that the popular micro was to be deleted began after Dixons started selling off display stock as part of a seasonal clearout.

Amstrad claims that its commitment to the 464, launched five years ago and a consistent European best seller, has never been stronger. Marketing spokesman Chris Ansty told ACU "Because of its versatility and price the 464 is still a popular choice for a first computer for many people all over Europe. We will continue to support it while new software is continuing to be produced for it."

Top shop

Amstrad users will be flocking in their thousands to the Computer Shopper Show '89 which takes place at London's Alexandra Palace from November 24 to 26.

The show is a marketplace for computer products of all kinds. Of the 250 stands, over 100 will sell Amstrad products. For those who need distraction from the inevitable footslogging involved with attending shows, the organisers have thoughtfully provided buskers, a strongman, stilt walkers, a robotic Father Christmas and a baby elephant.

COMPUTER SHOPPER SHOW '89



Getting graphical

The ninth Computer Graphics Film Festival will be held at the Odeon Marble Arch, London. The festival is scheduled for November 7 to 9 with ticket prices ranging from £16 to £28 with discounts for students. On November 7 at 7.30 pm the films judged best will be shown to the public.

Taking control with Quickshot



The Quickshot QS 129 – built for speed.

Spectravideo has launched what it hopes will be a revolution in game control, the Quickshot QS 129 Flight Controller. Unlike conventional controllers the Flight Controller does not rest upon a hard surface but is held in both hands as you would grip a handle-bar. Both fire and movement controls are operated with the thumbs of each hand.

With the release of the new controller for £12.50 Spectravideo has announced a reduction in price of the Quickshot Turbo to £10.50.

Amstrad music

Amstrad has increased its range of music equipment with the launch of the CKX100 computerised keyboard. The keyboard has a unique Playright feature which makes learning easier and playing more enjoyable. Notes played can be harmonised with background accompaniment as an aid for beginners. Performances can also be played back by the keyboard or stored on tape with a compatible audio system.

The CKX100 retails for £129.

A Christmas bonus

This Christmas, purchasers of the CPC 6128 with a colour monitor will receive an unexpected bonus in the form of a TV tuner. This means that when not using the computing facilities of the machine the monitor can be used as a colour television.

With this Christmas package comes a joystick and 17 free games including such classics as Monopoly, Trivial Pursuit and Scrabble. The package will retail for £399.

A clean wipe

BlackStuff has released a disc label that can keep up with the constant changes of the disc contents without becoming an undecipherable mess. The Polly Kit which enables you to use these ever-lasting labels costs £11.95 and contains 50 labels, an erasure-pen for partial erase of label, and a solvent for complete erase.

The labels work because they are coated with a shiny protective layer which when used in conjunction with the solvents allows the users to remove writing from the label surface. BlackStuff can be contacted at (0737) 833015.





By Adam Codman

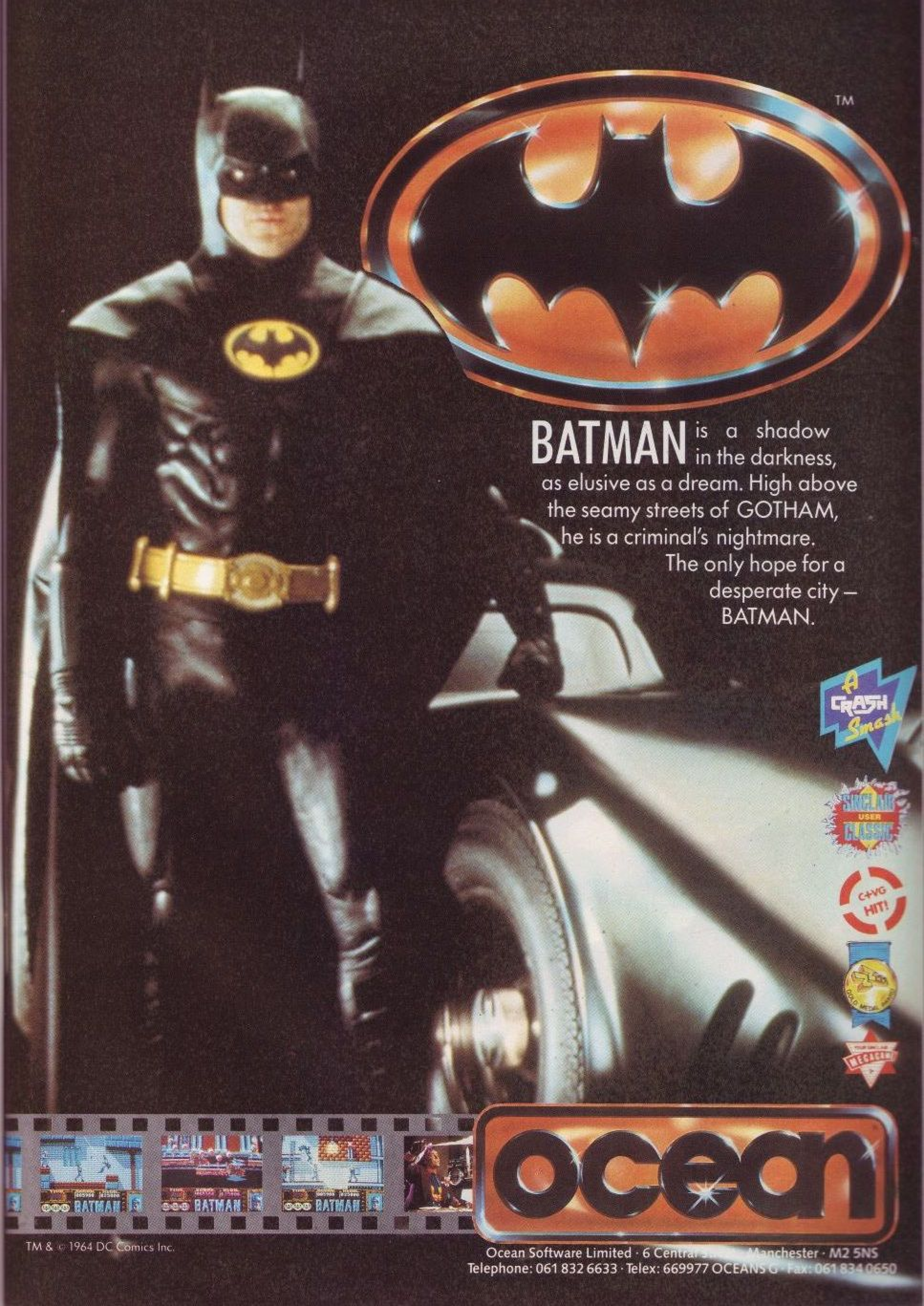
We were overwhelmed by the quality and quantity of the response to our Lone Wolf competition. After hours of anguished debate, deliberation and sleepless nights, a winner was finally selected. He is Adam Codman of Glastonbury, Somerset, who receives an engraved chalice and two Lone Wolf books. Joint second prize goes to Tristan Cooper of Stromness, Orkney and James Goss of Welling, Kent. Each receives a signed book.



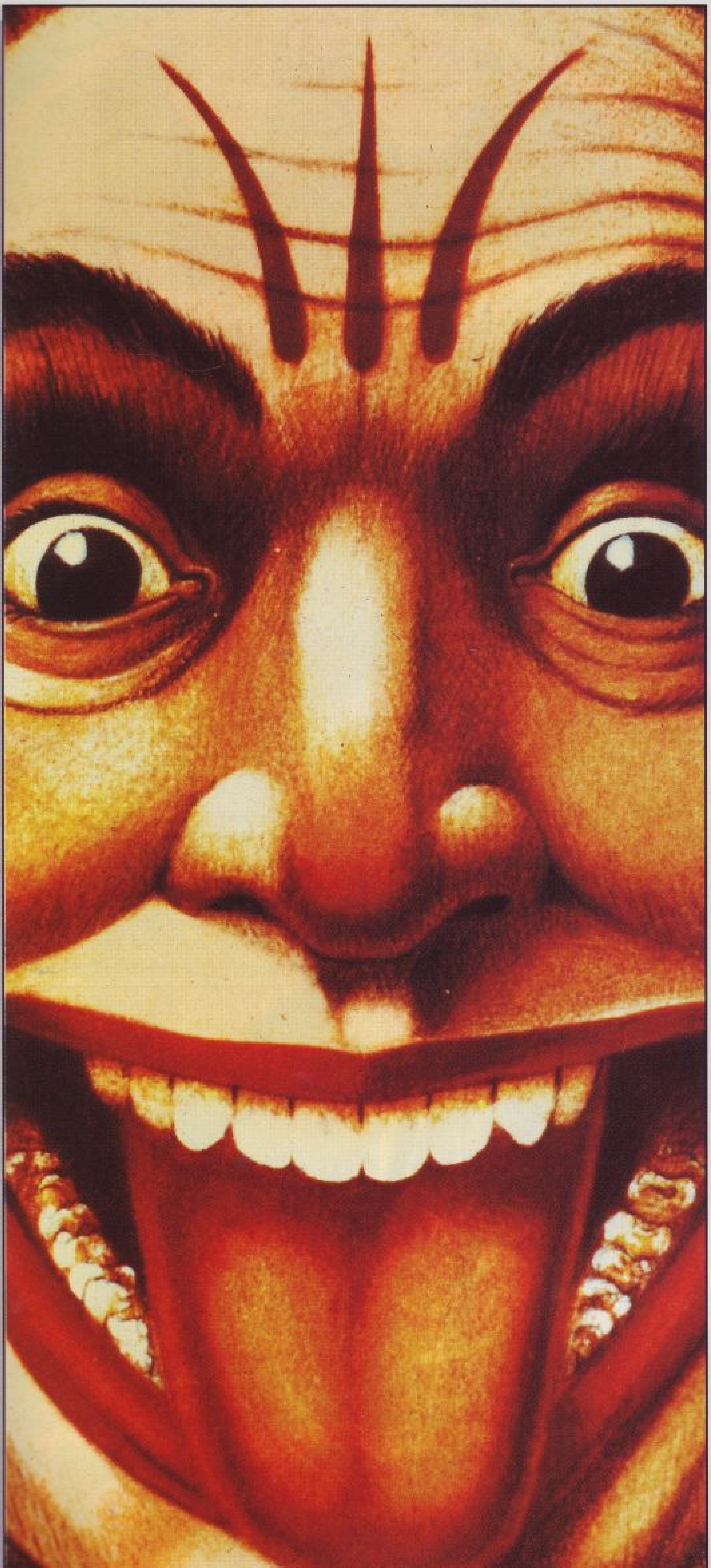
By Tristan Cooper



By James Goss



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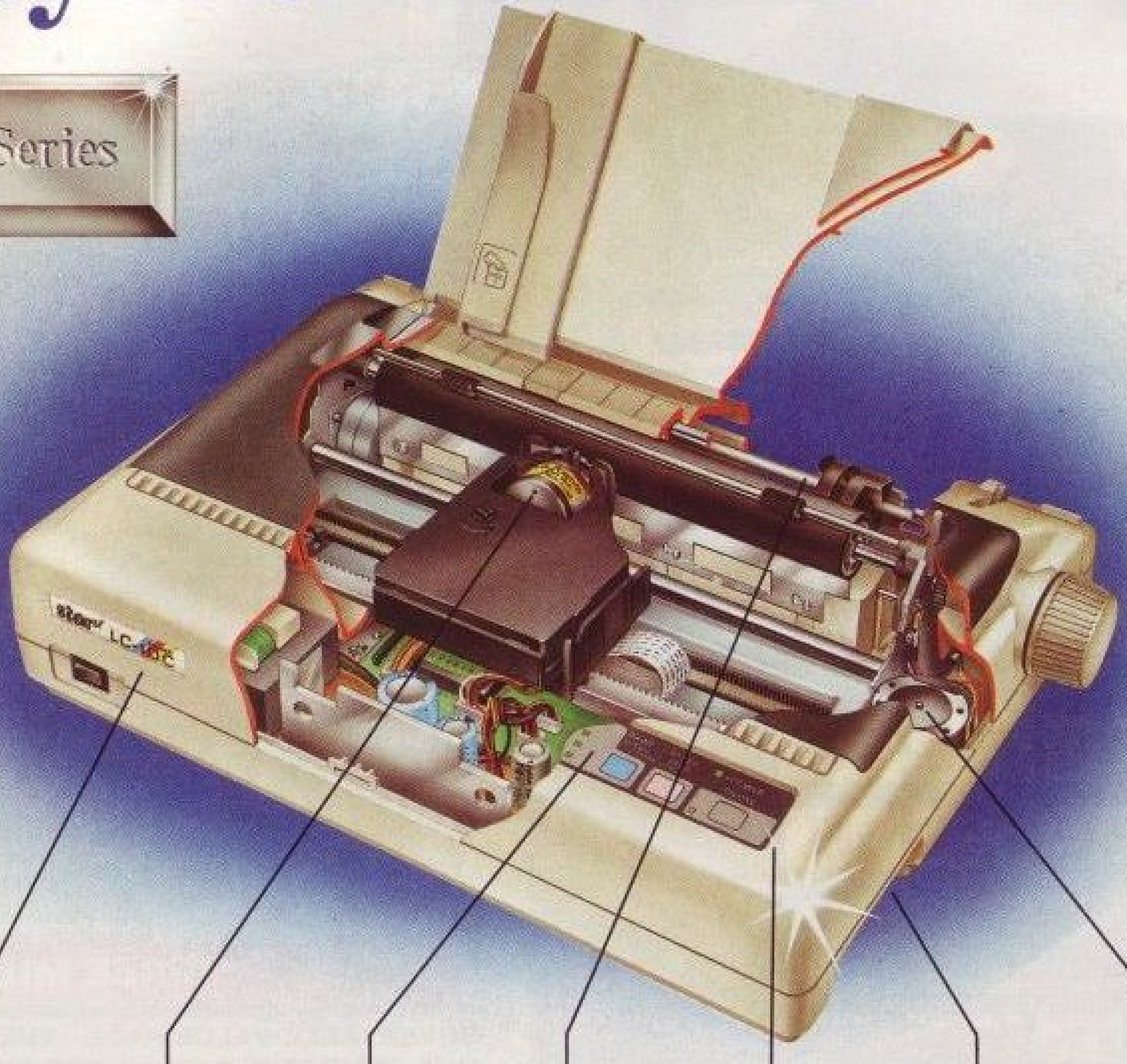


Roll up, roll up, this month's stupendous competition is an all expenses paid day out at Chessington World of Adventure for two, plus a copy of the Fiendish Freddy game and a goody bag. If all of this is not stupendous enough, 20 runner-up prizes consisting of a copy of the game and a goody bag are on offer. To win one of these fabulous prizes all you have to do is send in your very best drawing of a colourful clown (either good or fiendish) to the address below. A selection of winning entries will be printed. Entrant's names, addresses and ages should be clearly marked. Remember, the editor's decision is final.

Send your entries to:
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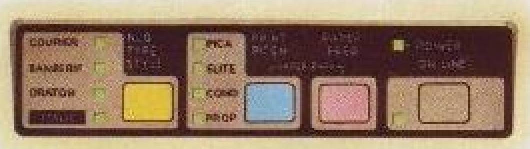


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The LC-10 is compatible with almost every computer's needs whatever the system. It can emulate most industry standards with ease, (there's even a Commodore version) a standard feature that we think should always be included. For connection over longer distances, there is even the option of a low-cost serial converter. And the range includes two models that also give you the option of first class seven colour printing.

Putting the LC-10 to work couldn't be simpler. At the mere touch of a button on the front control panel you can set your margins, choose from one of eight Near Letter Quality fonts and pitch sizes or simply put the paper feed into action. (No more inconvenient DIP switches to hamper you). And with the clip-in replacement ribbons, we've made ink stained fingers a thing of the past.



144 From 0-144 characters in one second and that's just the elite draft. The LC-10 also performs word perfectly at a rapid 36 cps with its exceptional Near Letter Quality printing for pristine correspondence and important documents. And while you print, the 4K text buffer frees you and your PC to get on with other things.

£ No other 9-pin printer in this price range can match it. Features like its generous buffer, built-in push tractor and revolutionary paper parking facility are included as standard. While the colour versions will give you impressive full colour graphics at very low cost. You could hardly ask for more from a printer.

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- Text to speech software is provided in ROM to make speech output simplicity itself.
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464 owners must already have at least one Amstrad drive.

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Drive and RODOS including PSU/Cables

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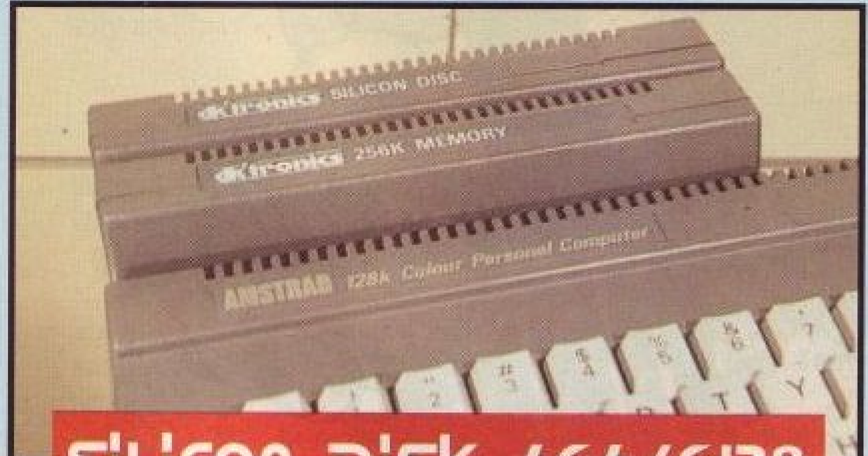


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- Features bank switching software for easy use by the programmer or for use as a data storage area.
- The software also features some extra BASIC commands.
- 64K unit expands 464 to 128K. The 256K unit takes your 6128 to a massive 320K!!
- 64K unit brings 464 up to CPC 6128 memory configuration making a much larger software base available. Will work straight off with many programs designed for this unit (including OCP Art Studio - see Ad.).
- Ideal for use with the CPM 2.2 etc.
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64K FOR 464
ONLY £99.99
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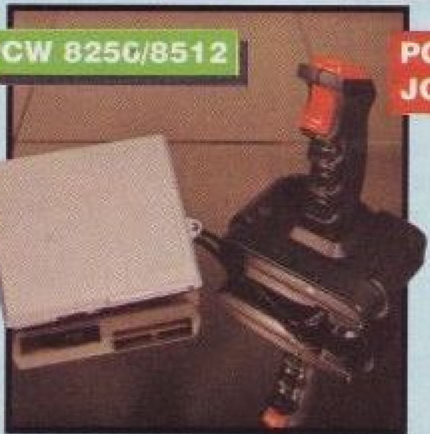


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- This is the fastest storage system available for the Amstrad CPC computers and is compatible with CPM 2.2, CPM+ and all DK'Tronics peripherals.
- The 2516K Silicon Disk is designed to be used in conjunction with at least one normal Disk Drive attached to the system.
- When the 2516K Silicon Disk is fitted only 2K is used for the Silicon Disk directory, leaving 254K for storage - that's 70K more than a normal Disk Drive.
- Programs can be exchanged between Silicon Disk and normal Disk for increased speed.
- Software is on ROM (nothing to load) and can be used in two modes - Basic under AMDOS with normal LOAD, SAVE CAT MERGE commands etc. and within CPM 2.2 CPM+ where commercial programs are designed to run on multi-drive systems.

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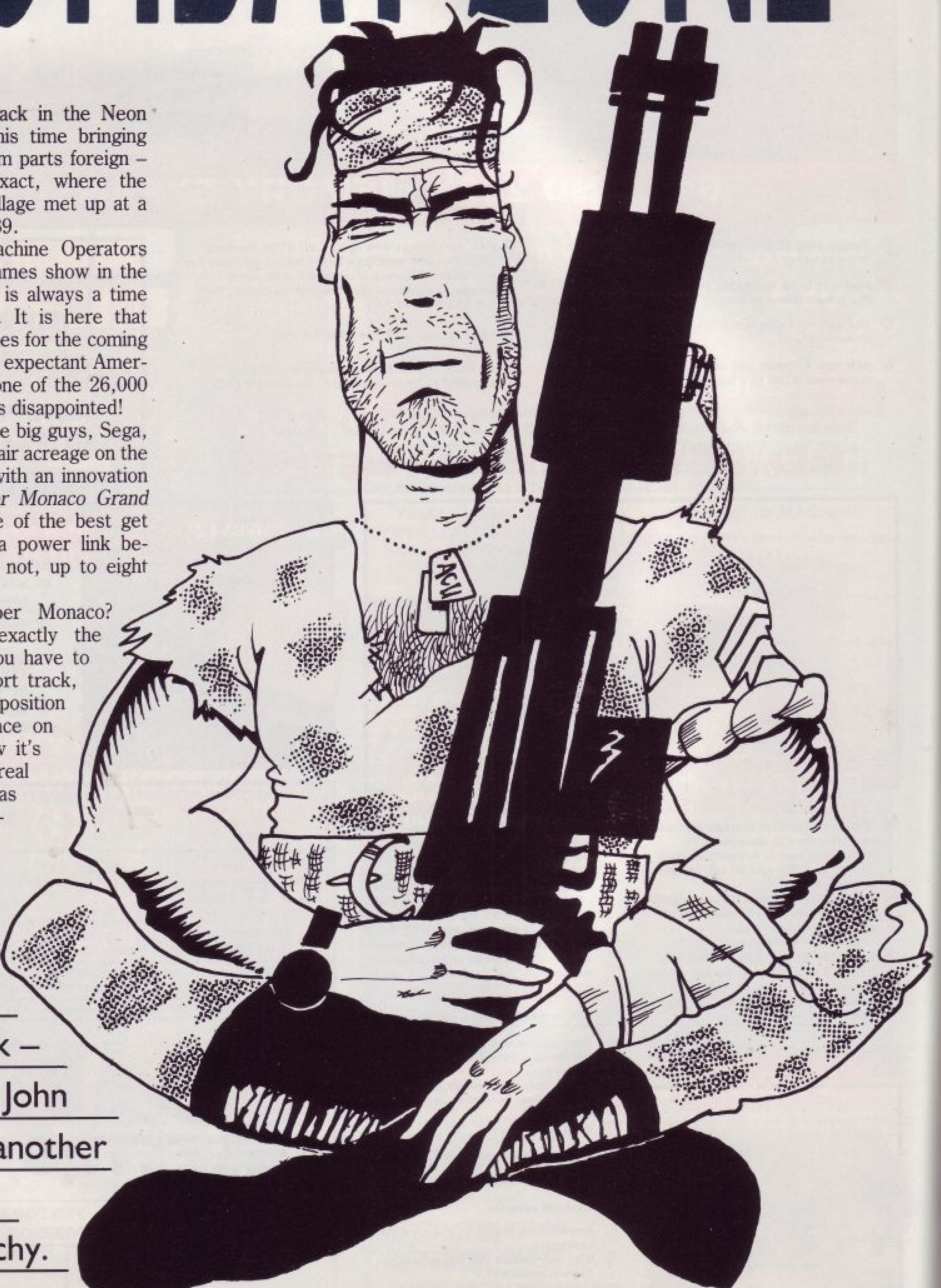
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COMBAT ZONE



Here we are back in the Neon Zone – but this time bringing news back from parts foreign – Las Vegas to be exact, where the global video game village met up at a show called AMOA '89.

The American Machine Operators show is the major games show in the continental USA and is always a time of great excitement. It is here that many of the new games for the coming year are shown to an expectant American trade, and not one of the 26,000 odd trade visitors was disappointed!

Starting off with the big guys, Sega, of course, took up a fair acreage on the show floor, leading with an innovation in the form of *Super Monaco Grand Prix*. How could one of the best get better? How about a power link between, believe it or not, up to eight machines!

Eight player Super Monaco? Gulp! It's played exactly the same as before – you have to qualify first on a short track, then with your grid position settled, go on to race on real track – but now it's over two laps with real opponents, as well as computer competition.

Just watch all those coin-op baddies duck – here comes John Cook with another helping of arcade anarchy.

At £9,000 per machine, it's unlikely that you'll get eight linked up in any arcade, but I expect you'll see a few fair pairs of upright units linked together in the UK. Move over *Final Lap!*

Sega were also showing for the first time, a new game called *Eswat*, which follows an ordinary 'on the beat' cop up through the ranks until he gets all the goodies – a mechanical exoskeleton, laser arms, etc. Then things start getting tough!

Also from Sega was the best of the golf games on show – *Super Masters*. Designed for the System 24 motherboard, this is probably the best golf game to hit the arcades yet. Expect both of these to hit the UK before the end of the year.

Atari Games is still riding high on the mega-success of *Hard Drivin'* and the guys that wrote its 3-D filled polygon routines have been working overtime ever since.

The game that was the centre piece of its stand was *Stun Runner*, a new sit-on space speeder epic that has you racing and blasting your way through tunnels and tracks in glorious full 3-D. A technical tour de force, but initial gameplay was found to be a little disappointing. But it looks good on the telly and maybe the gameplay will be a little beefed up before it hits the streets.

Good news for *Cyberball* fans too – an updated version called *Cyberball 2072*. It looks like it's been made easier for beginners, and has added depth for veterans.

Namco was borrowing a bit of the Atari stand and showing a newie called *Four Trax*. This was another linked game, where four single units were linked together, with each driving one of those small four wheeled jeeps, drifting around the corners at high speed. Looked great and a great deal less muddy than doing it for real. Should be a real winner when it makes the jump across the pond.

Jaleco was showing another rally driving game called *Big Run* – and of course there was the inevitable link-up option for up to four units.

Driving in the Paris–Dakar rally, you blam your way through the two speed gear box and try to stay on the road. Initial thoughts? An above average driving bash.

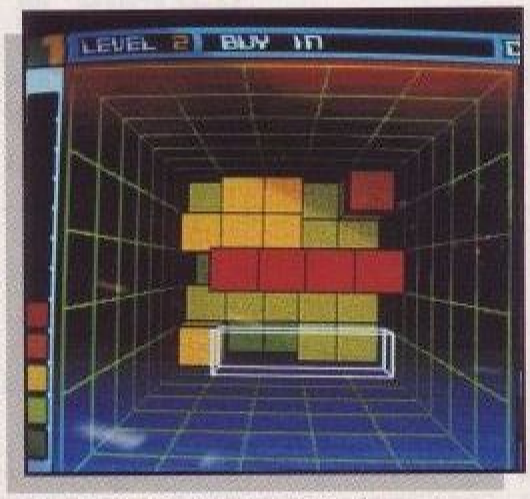
Konami was pushing its new *Spy* game hard, so I gave it yet another try, just to see if there was something I'd missed. And there was. A fair way into the game the perspective of the thing changes, from side view kicky-kicky boredom, to quite interesting – looking from behind the player, like *Cabal*. Firstly you are making your way down the drive of the main bad guy's mansion, then there's you flying a microlight, shooting down jets! Odd to hide such an interesting feature so far into the game, but if you haven't discovered it yet, it makes Spy worth a few extra 10ps yet.



Spy – Kim Philby was never like this.



Eswat – Police brutality.



Block Out – Tetris made harder.

Capcom's newest is a little disappointing – you'd think with the new CP System, their development team could come up with something better than another horizontal scrolling bash. *UN Squadron* is the name and it is competently done – but the dearth of imagination that came up with the concept, despite the quality of the sprite handling, graphics and sound, shines through. Capcom claim that on test UN Squadron is earning record bazonga. People must be playing it at gunpoint!

The home computer sector still can make an impact on the coin-op market. No... it doesn't mean that the latest unit has a CPC at the heart of the works! But it does mean that home computer format games like *Tetris* can sell over 24,000 boards – a mega hit in coin-op terms. And at $700 – $800 a throw, it comes to a lot of money too!

Maybe the same will happen with a Tetris variant called *Block Out*, shown by American Technos. Tetris in 3-D, with you able to manipulate the shapes in the X, Y and Z axes it's enough to make this player's brain hurt! But I've got a feeling that Technos has got an unexpected hit on its hands with this one – as its new wrestling game was being ignored while the operators were queuing up to get their hands on Block Out.

Anyone heard of Nintendo? I should hope so – as it's a game console is worth around $3.3 billion in sales per year, and that's about as much as the whole of the coin-op industry put together. They have a coin-op version called the Playchoice-10. Underpowered and boring as hell, but it sells.

More interesting is a version of the PC Engine that fits into an arcade cabinet. This baby can really go and what's more, the new games for the thing are going to sell for about $200 a throw. Compare that to around $700 to $800 for the price of a new board for a more conventional machine and you can imagine the cash-register signs chinging up in the eyes of the operators. Believe me, this is going to be big!

Those clever people at Irem have done it again after the fab *Dragon Breed*, with *X-Multiply* – my favourite game of the show. A horizontal scroller with imagination, flair, humour and it plays like a dream. Congrats boys – not to mention the two best pinball tables of the show, Data East's *Monday Night Football* and Bally's *Elvera and the Party Monsters*. Errr, but I did promise not to mention them, didn't I?

See you next month with news from the Associated Leisure Preview in the UK. ●

PAC-ED IN TEN

BY A.G. HALL

The old classic dot-munching game in only ten lines. The controls are A, Z, /, and / for up, down, left and right. Munching the large red dots allows you to eat ghosts without loss of life.

```
10 DEFINT a-z:DIM m(15,12),s$(9),s(7,3),i(7,1):SYMBOL 240,24,60,126,126,90,219,2
55,255:SYMBOL 241,255,195,255,255,255,255,255,165:SYMBOL 242,0,24,60,126,126,219
,219,255:SYMBOL 243,255,195,195,102,126,60,24,0:SYMBOL 244,255,231,219,255,255,2
55,255,165 [08]

20 BORDER 1:IF p THEN p=0:FOR z=1 TO 3:MID$(s$(z),3,1)=CHR$(241):NEXT:RETURN ELS
E MODE 0:WINDOW#1,1,14,1,24:WINDOW#2,15,20,6,17:PAPER#1,5:PAPER#2,9:CLS#2:PEN#2,
7:PRINT#2,,"SCORE:","LIVES:":ENV 1,15,-1,10:ENT 1,30,-5,5:ENT 2,30,15,5:ENT-3,1,
20,10,1,-20,10 [DB]

30 PAPER 5:l=3:WHILE 1:RESTORE 90:FOR a=0 TO 7:READ s(a,0),s(a,1),i(a,0),i(a,1),
b:s(a,2)=2:FOR c=1 TO 12:d=b MOD 2+4:m(a,c)=d:m(15-a,c)=d:b=b\2:NEXT:NEXT:FOR a=
0 TO 9:READ b,c,d:s$(a)=CHR$(15)+CHR$(b)+CHR$(c)+CHR$(11)+CHR$(8)+CHR$(d):NEXT [
40]

40 m(13,11)=9:m(2,2)=9:m(7,2)=6:FOR a=6 TO 9:m(a,5)=7:NEXT:CLS#1:FOR b=1 TO 12:F
OR a=1 TO 14:LOCATE a,b*2:PRINT s$(m(a,b)):NEXT:NEXT:FOR a=0 TO 3:b=s(a,0):c=s(a
,1):LOCATE b,c*2:PRINT s$(a):s(a,3)=m(b,c):m(b,c)=a:NEXT:SPEED INK 5,5:EVERY 600
,1 GOSUB 100 [6D]

50 SPEED KEY 9,9:WHILE e<70:EI:DI:d=1:i=INSTR(" \z/a",INKEY$):a=(s(0,0)+i(i,0))M
OD 14+1:b=s(0,1)+i(i,1):c=m(a,b):ON c+1 GOTO 70,80,80,80,70,60,60,70,60:BORDER 6
,14:SOUND 130,150,800,,,3:FOR g=1 TO 3:MID$(s$(g),3,1)=CHR$(244):NEXT:AFTER 500
GOSUB 20:p=1 [8E]

60 LOCATE s(0,0),s(0,1)*2:PRINT s$(6):m(s(0,0),s(0,1))=6:s(0,0)=a:s(0,1)=b:LOCAT
E a,b*2:PRINT s$(0):m(a,b)=0:IF c=5 THEN e=e+1:s=s+1:SOUND 1,300,8,3 ELSE IF c=8
 THEN SOUND 1,40:s=s+f [85]

70 g=s(d,0):h=s(d,1):i=s(d,2):m(g,h)=s(d,3):a=(g+i(i,0))MOD 14+1:b=h+i(i,1):c=m(
a,b):IF c THEN IF c<5 OR c=7 THEN s(d,2)=RND*4+1.5:a=g:b=h:GOTO 90 ELSE LOCATE g
,h*2:PRINT s$(s(d,3)):GOTO 90 [3D]

80 d=MAX(d,c):g=s(d,0):h=s(d,1):LOCATE g,h*2:PRINT s$(s(d,3)):m(g,h)=s(d,3):a=6+
d:b=5:IF m(g,h)<>7 THEN IF p THEN s=s+10:SOUND 1,0,-1,15,1,,20 ELSE SOUND 1,600,
-1,15,1,2:l=l-1:IF l=0 THEN e=70:LOCATE#2,1,9:PRINT#2,0:d=3:s=0:WHILE INKEY(47):
WEND [F8]

90 s(d,3)=m(a,b):m(a,b)=d:s(d,0)=a:s(d,1)=b:LOCATE a,b*2:PRINT s$(d):d=d+1:IF d<
4 THEN 70 ELSE LOCATE#2,1,5:PRINT#2,s:LOCATE#2,1,9:PRINT#2,l:WEND:e=0:SOUND 1,20
0,-1,15,1,1:WEND:GOTO 20:DATA 8,7,13,,,7,5,13,,32,8,5,14,,1982,6,5,13,1,1186,,,1
2,,1534,,,13 [31]

100 IF m(7,2)>3 AND e THEN LOCATE 7,4:IF f THEN PRINT" ":f=0:m(7,2)=6:RETURN:ELS
E PRINT s$(8):f=RND*10:m(7,2)=8:RETURN ELSE RETURN:DATA-1,1290,,,,,1994,,,,,74,4
,243,242,6,241,240,12,241,240,13,241,240,1,233,233,2,32,46,,32,32,,207,218,15,63
,32,3,32,231 [25]
```

TYPE

BY W. LAWRIE

I thought I'd seen it all, but a 10 line word processor...?

Pressing the 'TAB' key once changes the program from 40 to 80 column mode, pressing it again exits to Basic. Hitting the 'COPY' key dumps the text to the printer. 'ENTER', 'DEL' and 'CLR' keys function as normal.

```
10 DATA 01,0d,a0,21,09,a0,c3,d1,bc,00,00,00,00,12,a0,c3,17,a0 [5G]

20 DATA 54,59,50,c5,00,dd,7e,00,cd,0e,bc,cd,81,bb,cd,06,bb,fe [EB]

30 DATA e0,28,2d,fe,7f,28,04,30,f3,18,0e,3e,08,cd,5a,bb,3e,20 [25]

40 DATA cd,5a,bb,3e,08,18,12,fe,10,28,d6,fe,09,20,01,c9,fe,0d [EC]

50 DATA 20,05,cd,5a,bb,3e,0a,cd,5a,bb,18,cc,cd,84,bb,cd,11,bc [C7]

60 DATA 20,04,1e,29,18,02,1e,51,16,01,26,01,6a,d5,e5,cd,75,bb [F5]

70 DATA cd,60,bb,cd,2b,bd,e1,d1,24,7c,bb,20,ed,3e,0d,cd,2b,bd [73]

80 DATA 3e,0a,cd,2b,bd,14,7a,fe,1a,20,db,c3,1d,a0 [FA]

90 MEMORY &9FFF:INK 0,26:INK 1,0:FOR a=&A000 TO &A08B:READ n$ [C7]

100 POKE a,VAL("&"+n$):NEXT:CALL &A000:|TYPE,1:|TYPE,2:LIST [32]
```

MAGIC-PR

BY B. SUFI

Hmmm, something odd going on here. Choose a number and then follow the prompts. It's a strange day when the computer knows what is going on in your mind, but at ACU it's a strange day every day.

```
10 ' PROGRAM WRITTEN BY: BABAK SUFI [F1]

20 MODE 1:INK 0,0:BORDER 0:INK 1,24:INK 2,18:INK 3,6,7:ENT 1,100,-2,2:ENV 1,100,
2,2:SOUND 1,191,180,15,,1:SOUND 1,142,200,1,1,1:LOCATE 2,2:PRINT "PRESS A KEY AF
TER YOU HAVE DONE A LINE." [0D]

30 xy=INT(RND(2)*50)+1:xx=INT(RND(1)*6):IF xx=0 THEN xx=INT(RND(1)*6)  [C2]

40 LOCATE 4,10:PRINT "THINK OF A NUMBER ";:CALL &BB18:LOCATE 4,10:PRINT "DOUBLE
IT          ";:CALL &BB18:LOCATE 4,10:PRINT "ADD";xy;"                 ":CALL &BB18
[CE]

50 LOCATE 4,10:PRINT "DIVIDE THE NUMBER BY 2":CALL &BB18:LOCATE 4,10:PRINT "TAKE
 AWAY THE NUMBER         ":LOCATE 4,11:PRINT "YOU FIRST THOUGHT OF":CALL &BB18 [E7
]

60 LOCATE 4,11:PRINT SPACE$(20):LOCATE 4,10:PRINT "ADD";xx;"                  ":C
ALL &BB18:PEN 2:xyxz=(xy/2)+xx:LOCATE 4,10:PRINT "YOU ARE LEFT WITH";:PEN 3:PRIN
T xyxz;"          ":PEN 1  [69]

70 LOCATE 4,15:PRINT "WOULD YOU LIKE TO TRY AGAIN (Y/N)";ANSWER$ [82]

80 ANSWER$=INKEY$:ANSWER$=UPPER$(ANSWER$):IF ANSWER$="" THEN 80 [01]

90 IF ANSWER$<>"Y" AND ANSWER$<>"N" THEN 80 ELSE IF answer$="Y" THEN RUN ELSE IF
 ANSWER$="N" THEN 100 [3B]

100 CLS:LOCATE 10,10:PRINT "PROGRAM ENDS HERE":FOR i=1 TO 1000:NEXT:CALL 0  [FA]
```

MATHEMATICS TUTOR

BY M. PINDER

The questions come thick and fast with this tutor, no sooner have you entered the correct answer and the next problem appears before your eyes. Endless hours of maths.

```
10 MODE 0:PRINT" MATHEMATICS  TUTOR" [F1]

20 a=INT(RND*98)+1:b=INT(RND*98)+1:c=INT(RND*3)+1:LOCATE 5,12 [CA]

30 IF c=1 THEN d=a+b:PRINT a;"+";b;"= ?":GOTO 70 [11]

40 IF c=2 AND a>b THEN d=a-b:PRINT a;"-";b;"= ?":GOTO 70 [27]

50 IF c=2 AND b>a THEN d=b-a:PRINT b;"-";a;"= ?":GOTO 70  [1E]

60 d=a*b:PRINT a;"*";b;"= ?":GOTO 70 [BD]

70 LOCATE 1,25:PRINT"The answer is";:INPUT answer:IF answer=d
THEN 80 ELSE 90 [5E]

80 LOCATE 1,25:PRINT"Correct - Well done":FOR r=1 TO 1500:NEXT
r:GOSUB 100:GOTO 20 [8F]

90 LOCATE 1,25:PRINT"Wrong!! - Try again":FOR r=1 TO 1500:NEXT
r:GOSUB 100:GOTO 70 [67]

100 LOCATE 1,25:PRINT SPACE$(19):RETURN [28]
```

Vision of the future

In which Leslie Bunder catches a train to downtown Reading to interview the flamboyant, Porsche-driving Rod Cousens of Activision.

After hardwiring my Atari VCS to a proton plasma projector I set forth to explore a brave new world. The Little Computer People proved to be invaluable guides helping me to avoid all the Pitfalls as I Hacked my way through the impenetrable growth of a British Rail sandwich bar. I paused in front of the mirrored temple doors before entering to meet the R-Type and the incredible world of Activision.

Since its creation in 1979, Activision has changed many times (including the company name) but the greatest change has to be its progress from the early support of the Atari VCS to the 16-bit number crunchers of today. The company empire stretches from the land of the rising sun to the home of apple pie to the European shores of Germany and France. Heading the European operation is Reading-based Rod Cousens who, along with PR person Amanda Barry, is spreading the word according to Activision.

Flamboyant, Porsche-driving Cousens is a seasoned software veteran. In 1981 he got involved with the establishment of Quicksilva, which became for a short time a leading software house.

After selling out to Argus, now called Grandslam Entertainments, Cousens got involved with establishing Activision's offshoot label, Electric Dreams, and gradually worked his way up the Activision label into the position he holds today. With a wealth of experience in games, Cousens knows what he is talking about; he knows how a games business should be run; and he knows the importance of getting involved with charity.

Cousens has been a leading campaigner in establishing the UK software industry annual dinner, INDIN, as well as helping get together charity software compilations such as *Soft-Aid, Off The Hook* and *Kids/Aid*. How does Cousens see the Amstrad CPC market? Has it changed? "When we talk about the marketplace, do we talk about the UK or do we talk about Europe? I tend to think about myself nowadays as performing in a European marketplace," Cousens said.

"The main strengths for the CPC are in France and in Spain, as well as in the UK. As long as we can have a market share we will always support the machine."

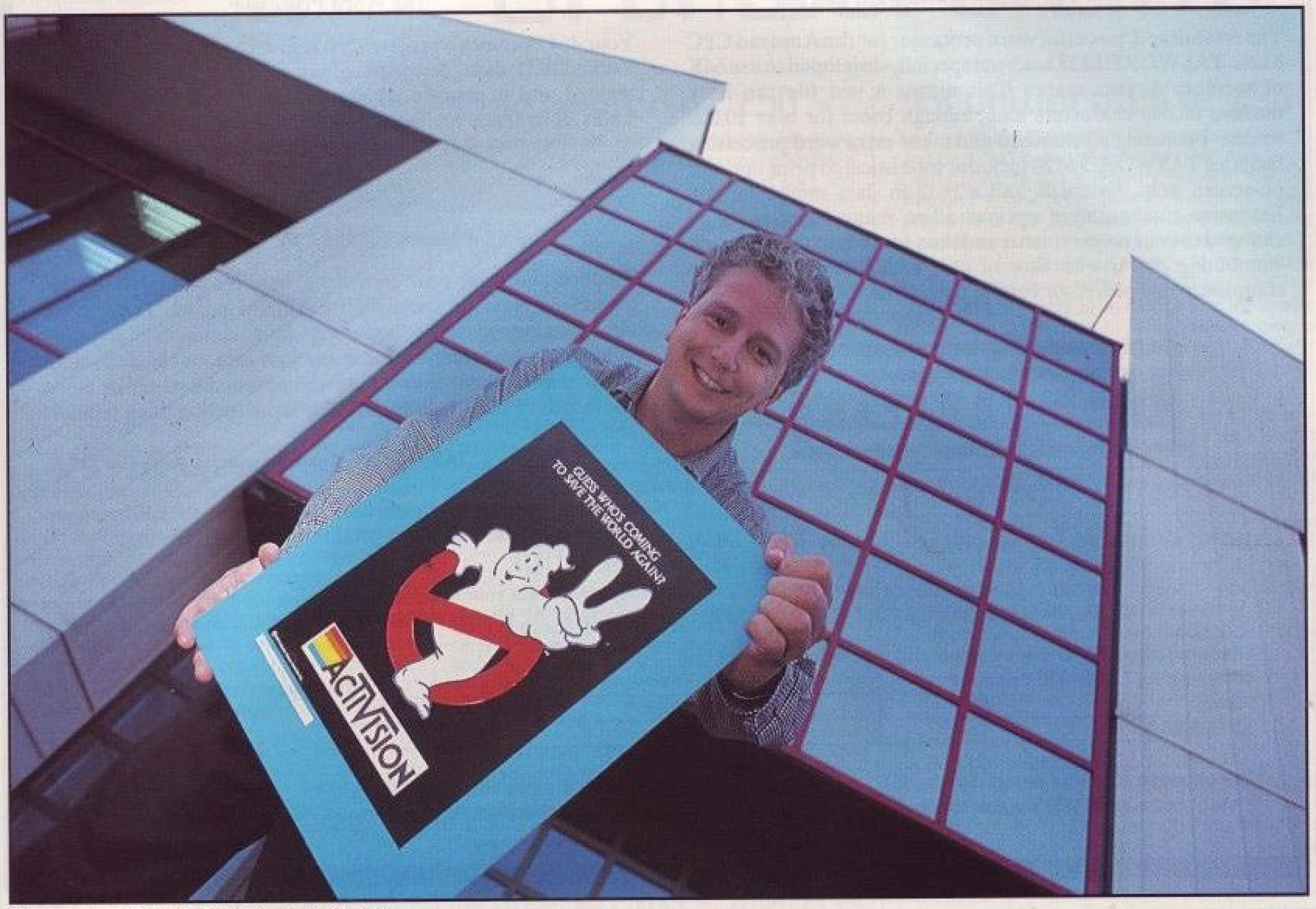
With so much involvement in the games industry, has Cousens noticed any change in products over the years? "The one thing about this business that is exciting is that you cannot stand still. You have to be pioneering. You have to look at the technology in the hardware and ask, have we fully exploited it?"

I ask Cousens whether he is worried by the way in which games are going; the added realism in some games, for instance, which feature killing people. "It has to be realised it is a piece of computer software and it's not a real-life situation. People shouldn't take it so seriously, but equally software publishers do have a certain responsibility. That is something we are charged with and something I hope we don't take too lightly."

For software houses who wish to have their software certified, the British Board of Film Classification



In the driving seat – Rod Cousens.



Cousens – getting his kicks on Route 66.

operate a voluntary scheme whereby, for a couple of hundred pounds, games will be classified, like films; what does Cousens think about that? "I question what merit it has. It may be something which will have to happen in years to come and it's something I think the respectable and reputable software houses will respond to. It's not an issue, we're not in contention with it. I cannot see its value in our marketplace. I've got no evidence that we need to use it today."

But are games not becoming too close to real life? "I think that is something we are always striving for. If you take that to areas of simulation, we are looking for as much realism as possible. If it's an arcade game, it's not real life. Part of your charter is to fulfil people's fantasies."

What about the negative way women have been portrayed in computer games? "I don't know about that but, when you look around our company, we probably employ more women than we do men. More and more women are coming into computers, I've got a thirteen-year-old daughter, and she is well switched on to computers and I see more and more evidence of that happening." What about exploitation by programmers? "They've got to stop exploiting software houses, I agree. First of all, there is a society of software authors and I contribute to that. The whole purpose of that is to ensure that software developers get a fair deal. There are lots of instances of software programmers having equipment and then disappearing; of software programmers having advanced payments and then disappearing too. The area where software developers are being ripped off the most is that of software piracy. Not by software publishers, not by software distributors, it's by piracy. And a lot of them contribute to that themselves because they pirate other people's programs."

Activision have a number of film licences coming out; are they worth the money? "I do think they are. The biggest selling program to the best of my knowledge last year was *Robocop*. Equally, we are releasing *Ghostbusters 2* this Christmas and Ocean are doing *Batman*. We are doing this because the market is telling us there is enormous demand from the consumer for licences. If we can back that up with software which is of high quality and which has a game content which keeps people amused, then we have done our job."

What is the future for Activision? "We've got a lot of work to do in the marketplace. I don't think we can sit back and be satisfied with our market share. I think we need to increase our market share, both in terms of our existing product line, and future and emerging technologies."

I have been given a preview of both *Ghostbusters 2* and *Powerdrift* on the CPC, and having seen it, I have to say that Activision has produced something quite amazing. Both games feature great-looking graphics and excellent gameplay.

Over the next few years, we will see Activision make yet more strides in their global quest. Like Electronic Arts, Activision are committed to the exploration of CD as a form of media, and Cousens informed me that this was an area of great interest to him. As long as Activision can excite us as they have done over the last ten years, the next ten years look to be even better than the first.

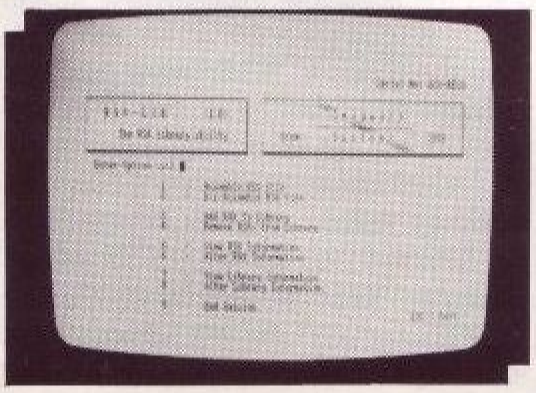
Residents only

Kenn Garroch reviews a useful new Resident System Extension from Smogware Systems

One of the most useful and perhaps under-used facilities available on the Amstrad CPC machine is the ability to add commands to Basic. Some of these come built into the system e.g. /DIR, /ERA, etc. Known as RSXs (Resident System Extensions), routines accessed in this way are written in machine code either as custom designs programmed by the user, or typed in from magazines.

The reason why RSXs are not widely used is probably because they are hard to maintain. The trouble comes when a 'handy' utility is typed in from a magazine.

It may take up the same memory area as other RSXs, but unless all the routines are re-assembled and placed in areas where they will not interfere with each other – a pretty tedious process – they cannot be used at the same time. Moreover, many RSXs published in magazines are not printed as source codes (the machine-code mnemonics) but as Data statements with a Basic loader program; relocating one of these requires either a specialised program or a lot of know-how. To get around the problems that crop up in the administration of a large number of RSXs, a program can be used.



Supplied as a disc and manual, RSXLIB aims to take the finger work out of RSXs. The program is written mainly in Basic in order to save on development time and make sure that there are fewer errors, according to the author. As speed is not really of the essence at any time, these arguments are quite valid – many commercial programs and utilities are (believe it or not) written in Basic.

On the disc are the RSX library maintenance program, an example program that shows off the supplied RSXs, and fifty-two 'useful' RSX binary files. These latter range from graphics commands, swap instructions for Basic variables (e.g. /REAL.SWAP A,B swaps the contents of the real variables A and B), and memory moving routines, to the fairly useless (but fun?) screen shakers. But the key program among all of these is the library maintenance program RSXLIB. This operates on a menu-type system and provides eight basic functions. Files can be assembled from scratch i.e. a set of pre-defined RSXs can be grouped together to form a library file; this enables a set of new commands to be strung together for use in a particular application. Full instructions on how to load the RSXs are given at the end of the assembly process – the MEMORY setting, load position and CALL to make for installation.

To load the selected RSX commands is now simply a matter of loading the defined RSX file and making the appropriate set-up call. As everything is menu-driven, the process is quick and easy. A disassemble RSX command is also provided to allow single RSX commands to be extracted from pre-built RSX files in order to save them to disc. This works with most RSX files and is a useful way of separating RSXs so that they can be used independently.

Other options include adding new RSXs to the library, including those written by the user, typed in from magazines etc. RSXs can also be removed, their details viewed, and edited. All in all, everything to manipulate RSXs and enable them to be used in an easy systematic matter is here.

For those who are new to RSXs, the manual is quite helpful, though it does not have a proper index. (This could be an oversight as I had a preview copy, but considering the amount of information available, an index would help.) It is written in a rather chatty style but in a rather charming, 'un-American' way that is quite readable. It starts off by justifying the need for such an RSX library program and does a good job; this is quite unusual as most programmers expect everyone to see the obvious need for their programs.

Following a full set of instructions for backing up the disc and using the commands, the manual goes into a little more detail on the contents of the RSX library files. This includes how routines are relocated and what problems can arise, i.e. where RSXs depend on routines in associated programs. The 'odds and ends' section offers a few ideas about what can go wrong with RSXs and their use in conjunction with RSXLIB, as well as some tips for adapting 'magazine' RSXs to work with the library system – pretty easy, as they just need to be saved as binary files and the load address and length known. The end of the manual covers all of the supplied RSXs (fifty-two of them – see above) in some detail and explains their uses.

RSXLIB is quite a useful piece of software and takes a lot of the tedious work out of dealing with RSXs. The manual is well-written and informative; even the inexperienced user should be able to follow what is going on. No great knowledge of machine code (if any) is needed to use the program, and making collections of useful (or useless) RSXs should be quite easy.

Package: RSX-LIB, The RSX library utility.
Supplier: Smogware Systems,
20 Grove Avenue,
New Costessey,
Norwich,
Norfolk,
NR5 0HN.
Price: £19.95

The greatest machine on earth

Trevor Cummings examines the pros and cons of the CPC and examines ways of improving its performance



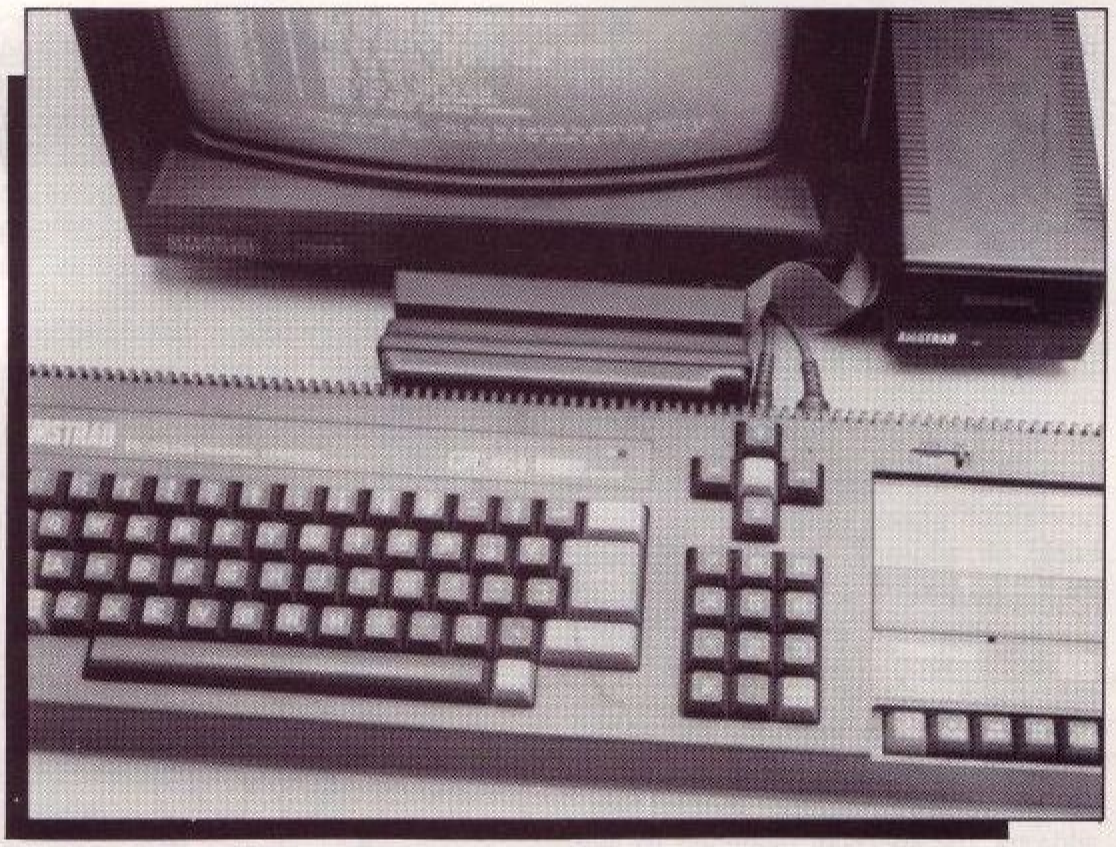
For the main part CPCs are extremely versatile machines. Their large memory capability, expansion possibilities and external ROM system make them ideal for many different uses. Many people agree that they are the perfect bridge between the pleasure or games machine and the serious, business type computer. Personally I have had, and still have, other machines including a PC, PCW and an Amiga but none of them seem to quite fill the CPC's versatile shoes. However, there are one or two shortcomings. After all nothing can be perfect, can it? (Except Aunty John of course, but we don't talk about him). In some cases it is due to the design but not always. This month I am going to discuss some of these.

Monitors

The first problem, and I consider it to be a major one, is the monitor. A lot of users bought their machines with a green monitor, to save on their initial outlay, thinking that they would buy a colour one later should the need arise. A sensible idea? Of course it is – except for one thing as many have since learned. You cannot buy a colour monitor on its own. Amstrad have not made them available. Their marketing policies, for whatever reasons, dictate that, if you buy a computer with a green screen, you are either stuck with it or you sell up and start again. Not nice, eh? The only alternative is to buy a second hand one, but who is going to sell a monitor on its own? Obviously such things are rare. A TV modulator will send colour ranges to your TV set but the quality isn't a patch on a monitor and it's not quite the same thing.

So what about a different make of colour monitor? Surely that would do the trick. Well . . . yes and no. 464 owners could manage it but for 664 and 6123 users it wouldn't do. The difficulty is in the built-in disc drive which is powered by a 12 volt line from the monitor. What other monitor provides such a line? Yes, you've got it. None of 'em. At least none that I know of. And where does this leave you, the would-be colour owner? Where else but banging your head on the wall in between mopping up your tears and shouting "I don't wanna C64, I don't wanna C64".

There is a solution. As I said, 464 owners can use an alternative monitor as can 664 and 6128 owners so long as we can find an alternative 12 volt line to power the disc drive. One source of 12 volts is the MP-2 TV modulator, not the MP-1, but there are others. All we need is to make a cable which connects the right pins from the computer to the right pins of the monitor. Watch this space in the near future for a small project to do just that and a 12 volt supply. In the meantime, if you are lucky enough to stumble onto a second hand monitor, and you own a 664 or 6128, be sure it is a 644 model which provides the 12 volt line. The 640 model does not. 464 owners are OK with either model as the DDI-1 and FD-1 disc drives have their own power supply.



The heart of the machine.

Comms

With all kinds of interesting computer facilities, such as Micronet, Microlink, bulletin boards, multi-user games, shopping or just chatting becoming increasingly available down the telephone line, increasing numbers of users are getting into comms. That is, communicating with other computers on the phone. To keep costs down, and for technical reasons, the normal method of transferring data on the phone is serialling. Unlike the parallel printer port which sends a whole byte of data at a time along 7 or 8 wires, the serial method sends one bit at a time down one wire. To do it requires some serial software, a serial port and a modem to connect it all to the phone line. There are several software packages available, the most popular being Pace's *Commstar* and *Mex* which is public domain. The modem is equally easy. There are plenty around, new and used, at prices to suit every pocket. There's even a freebie from Micronet, which I use most of the time.

Unfortunately Amstrad didn't include an RS232 serial port in the design of the CPCs. That's not a fault and I don't criticise it. If they'd built everything that we all might need into the machines, the resulting cost would have put us all off. So it's another item that must be bought if you want to get into comms. It isn't possible to simply connect the existing data or address lines to a modem and write some software to run it because the voltage levels are wrong. The RS232 system requires data voltage levels to be plus and minus at least 9 volts. If nothing else, we don't have a minus voltage in the CPC and even if we did we couldn't put it on any data lines. So it's another add-on or nothing.

I intend to bring you your very own ACU RS252 interface. So dig the old soldering iron out of the loft, dust off the old brain cells and be ready for an exciting new project which will soon appear, as though by magic, in these very pages. For more detailed comms advice for the beginner, check out Gordon Bates's new column in this mag.

Disc system

It wasn't so long ago that we had a full discussion here about disc drives, so I'll be brief with these comments. Firstly, we all know that the CPC can handle only two drives, A and B, and the reason was explained earlier in the year. However, as users learn that the disc drive controller chip, the 765, used in the CPC system, is capable of accessing up to four drives, I am often asked why we can only fit two. Especially since two 3in. drives and a third 3.5in. or 5.25in. would be desirable.

The answer is simple. The 765 has two output pins which are used to select a particular drive. If they are both low, 00, then drive 0 is accessed. If they are set to 01, then drive one is accessed. As you can see, only one line changed level, from 0 to 1, for two different drives to be used. For a third and fourth drive to be added, the second output pin must be used. The CPC is designed so that the second pin is not wired up to anything. It cannot be used. Writing software to send it high or low would therefore be useless.

Only the first pin is connected into the circuit. This is the reason why we are limited to two drives. I don't see any good reason for this limitation and I do find cause to criticise it. It would be possible to rewrite the disc operation software and physically connect some logic circuitry to the unused pin achieving a four drive system, but the task would be daunting and the gain would be minimal. We did a small project in the July issue which allowed the addition of a third drive without having to open up the computer. In fact it added a second B rather than a C drive and each B drive could be switched into line as needed. If you missed that issue, write out 100 lines: 'I will never miss ACU again'. And try to get hold of it.

Add-ons

An excellent CPC feature that we all know is the ability to add all kinds of

peripheral devices to the expansion port. Many are made for us such as romboards, RS232s, teletext adaptors, speech, music and drum machines, eprom programmers and silicon discs. I wouldn't be at all surprised to see a robot arm coming our way in the not too distant future.

Another frequently asked question is "How many of these can I stick on the expansion port before the power fails?". There is no easy answer to this. It depends on what the extras are and how much power they consume. Certainly all add-ons, which don't have their own power supply, use up some of the computers available power just by being there. All their chips use power and the more you take from the computer, the closer you will be to power failure. It can only supply so much. Some, though not many, add-ons are specially designed to use as little as possible. Microgenic's romboard is one such device. Personally I have had half a dozen extras fitted without any failure. On the other hand one person I know thinks he can fit only one. Which brings me nicely to another point.

The CPC has a safety mechanism built into the monitor. If you try to draw too much power from it, it will switch off. The red light on the computer will turn off and you can only power up again by switching the monitor off for a while and then on again. This is how you can tell if you are asking too much of the system.

The gentleman who can only fit one add-on has a different problem. His computer stays on but freezes up. It isn't power but, in all probability, his connectors. It isn't uncommon for edge connectors to be poor and not make contact properly. It could be that they have become worn, that they are not too good in the first place or that the expansion socket on the CPC's board has become worn with too much sliding things on and off. They can only take so much and do not last indefinitely. Also connectors often get dusty and fail to make contact.

To overcome the difficulty you should slide the offending peripheral on and off a few times, try again, refit, try again, until it works, and then leave it on. If that doesn't produce results than clean all contacts with contact cleaner or methalayted spirits. If it still refuses to work try cleaning them again and fitting them to the machine whilst they are still wet but *don't turn the computer on until they are dry*. If it's the CPC's board that's worn, a film of solder wouldn't hurt. You should be able to overcome all the difficulties in this way. Although I did have a silicon disc once that required the same treatment every time it was fitted and, on occasions, I had to give up altogether.



And finally...

Finally, we'll just take a quick peek inside the CPC to get our fix of hardware. You've probably noticed references to the computer clock in your reading and might well have thought that it referred to a 12 or 24 hour clock, the sort that is used to date-stamp discs. No so. The clock in question is one that no computer, whether a mainframe or a wrist watch, can do without.

In fact 'clock' is not a very good word for it at all. It is a 'pulse train' consisting of regular pulses going low to high to low to high etc. at regular intervals. You've heard of computers running at 8 megs and 16 megs. It means that they work from an 8 or 16 megahertz pulse train.

So why is it essential? Simply this. You've seen the AND gate before. Imagine a 2 input AND gate with both inputs high. Its output will be high and it will stay forever high unless at least one of its inputs changes to low. Now suppose an 8 meg pulse train or clock is connected to one of its inputs, the other is high. Its output will change exactly in sync with the clock. Not a lot of use, I know, but it shows the idea. Let's now connect another clock running at only 4 megs to the other input, still keeping the 8 meg clock on the first. What shape of pulse train would we get out? Draw it and see. You will find that, by mixing the two trains in this way, a different train is generated. The point I am making is that, unless there is a voltage change then nothing will happen at all. This is true throughout the computer, inside the chips, inside the Z80, in fact everywhere. Components react to voltage changes. At the very basic level all chips, and therefore computers, need voltage changes in order to do their job at all and these changes are derived from a simple pulse train known as the system clock.

The CPC's main circuit has two such clocks; the sound clock which runs at 1Mhz, or 1 million cycles per second, and the main 4Mhz clock which the Z80 uses. Both are derived by hardware divisions of the output of a 16Mhz crystal oscillator.

You might have heard of computers running at speeds such as 4 mips and you could be tempted to believe that the CPC runs at 4 mips because the Z80 runs at 4Mhz. But mips mean Million Instructions per Second which makes a 4 mips computer pretty nifty to say the least. The 4 Mhz Z80 isn't quite that quick. In fact it takes 4 clock cycles to get an opcode, such as LD from the program. Then more cycles for memory reads and writes. So an instruction cycle uses about 10 or more clock cycles. No quite so nifty, huh? But not quite so pricey either. ●

The front cover gives a hint to the chaotic personality behind this month's main game – *Fiendish Freddy*. This decidedly uncute anti-hero is ready to do anything to bring about the downfall of the circus with some hilarious results. You may prefer to get your teeth into *Trancer*, a maddening puzzle from the murky mists of history.

GAMEPLAN



FIENDISH FREDDY

Circus antics where the clowning around is deadly serious.



SHINOBI

A ninja massacre as the hooded hero clashes swords with the bad guys in a desperate rescue attempt.



MOVING TARGET

When the bad guys step out of line, in go the commandos. As the last survivor it is up to you to deliver the goods.

PLUS

Story So Far – Vol 4, Crystal Castles, Trancer, Avon and Xenon.

TOP 20

Pos	Title	Last month	Publisher
1	Crazy Cars	(12)	Hit Squad
2	Mig-29	(2)	Code Masters
3	Twin Turbo V8	(3)	Code Masters
4	Robocop	(1)	Ocean
5	Indiana Jones – Last Crusade	(NE)	US Gold
6	Green Beret	(6)	Hit Squad
7	Daley Thompson's Decathlon	(4)	Hit Squad
8	Fast Food	(10)	Code Masters
9	Crazy Cars 2	(11)	Titus
10	Monte Carlo Casino	(8)	Code Masters
11	Enduro Racer	(7)	Hit Squad
12	Yie Ar Kung Fu	(5)	Hit Squad
13	Dragon Ninja	(14)	Ocean
14	Pro Powerboat Simulator	(9)	Code Masters
15	Summer Games	(NE)	Kixx
16	Batman – '89	(NE)	Ocean
17	Spitfire 40	(NE)	Alternative
18	Hit Squad Tennis	(NE)	Hit Squad
19	Emlyn Hughes Int. Soccer	(18)	Audiogenic
20	Operation Wolf	(NE)	Ocean

Last month's position in brackets
Top 20 compiled by Gallup



Xenon

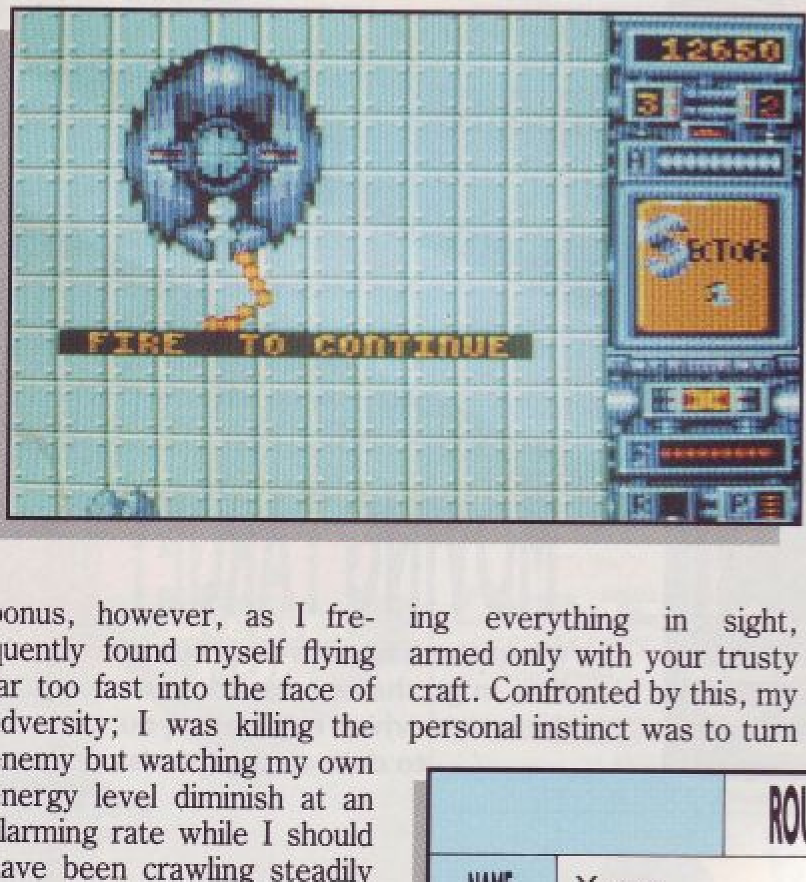
Do it to them before they do it to you, as a crab-like tank or a high flying plane.

Imagine a world where everything is blue and seen from a bird's-eye view. Well, that is the planet Xenon. It is a hostile world, and the only means of survival is doing it to them before they do it to you.

You take the form of a craft; not any old craft, though, this one is special. It is a land and air craft, capable of switching from being a small, blue, crab-like tank which trundles along the ground firing at the enemy tanks, to become an aeroplane which flies above the tanks, dodging their bullets and blowing up the firing towers and the enemy aircraft below.

Having loaded the game, the menu offers you the choice of keyboard or joystick. What with metamorphisizing every few seconds, though, and firing as you move left, right up and down, I do not recommend using the keyboard. The joystick is more versatile and easier.

Until your energy diminishes, air play is fast and furious, but then your movement tends to slow down dramatically. Life as a tank progresses at a robotic snail's pace in comparison. This can often be an added bonus, however, as I frequently found myself flying far too fast into the face of adversity; I was killing the enemy but watching my own energy level diminish at an alarming rate while I should have been crawling steadily towards them firing at will. The game is very one-sided, because every weapon the enemy possesses can kill you, regardless of shape and form.



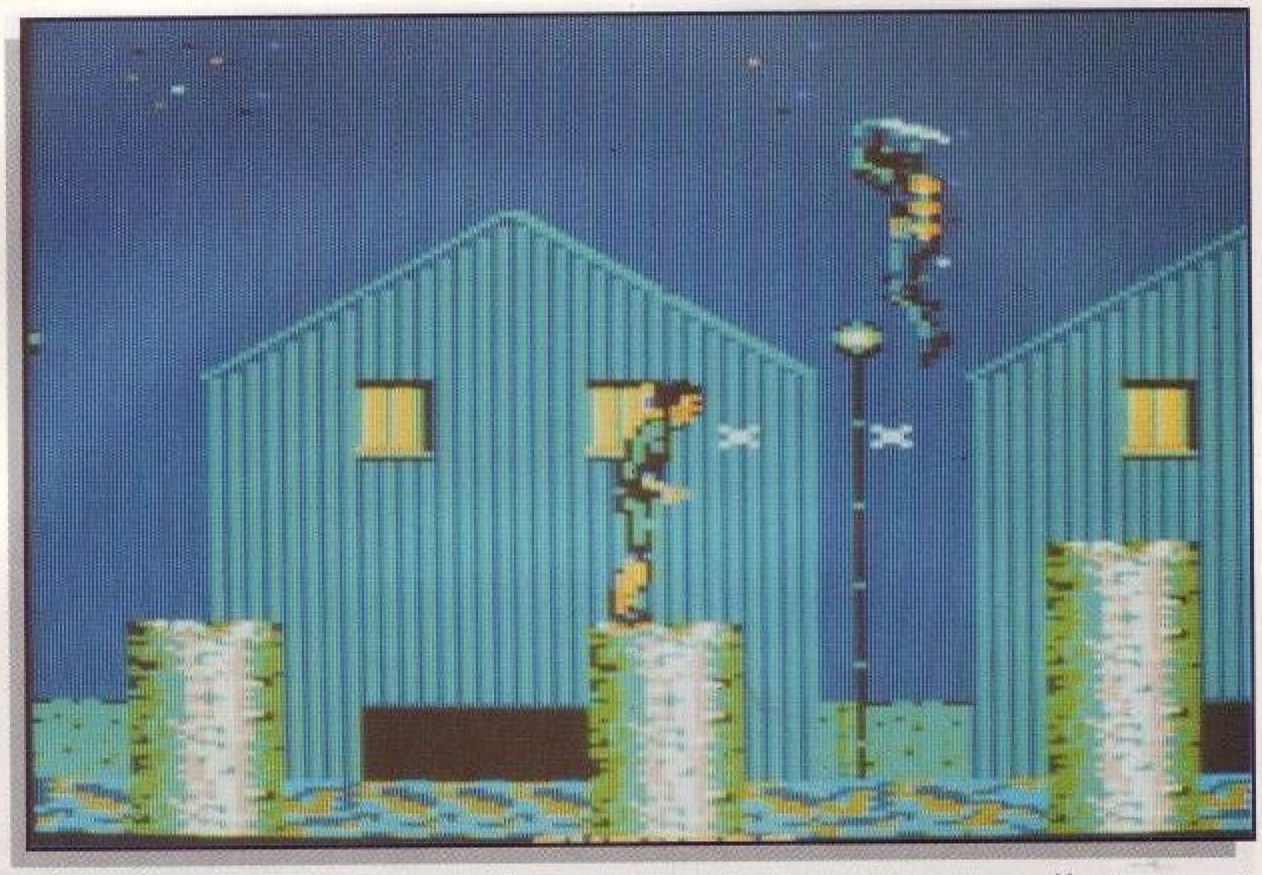
The object of the game is to dodge a fair minefield of firing objects while destroying everything in sight, armed only with your trusty craft. Confronted by this, my personal instinct was to turn around and go home, but planets were not saved by that sort of behaviour. You are helped slightly by having three lives and the opportunity to replenish energy, bullets and firing range by travelling over the relevant pod which appears intermittently.

It is not easy. Once everything on the first screen has been destroyed and you have managed to duck and dive, dodge and weave past all the missiles that the computer can throw at you, there is still one final obstacle to overcome before progressing to the second screen. This is a giant tank. It fires like crazy and its defence is impenetrable. Yours, on the other hand, drops like a dead weight, because you have only the smallest of openings to hit him where he is vulnerable. Get past him and you are doing well. The next screen is much like the first with yet another huge tank at the end. The game continues like this as you try to increase your score and wipe out all evil from the planet Xenon.

My only two criticisms: every time you die – and this is frequently – you have to return to the beginning, and the music is on the tinny side, but the sound effects, which are very realistic, compensate for it. It may all sound a bit too difficult but do not be deterred; it is an enjoyable game and one that comes with practice.

Emma Norman

ROUND-UP			
NAME	Xenon		
SUPPLIER	Mastertronic	PRICE	£9.99
65%	39%	69%	63%
GRAFFIX	SONIX	PLAYABILITY	OVERALL



Shinobi

Another Ninja bonanza which has you rescuing babies from the henchmen of oriental baddies.

Now I'm sure that you, like me, are sick to death of ninja games. Kung Fu, Ju Jitsu, Hari Kari, Chop Suey, arrrggghhh! Guess what, Virgin/Mastertronic has released yet another.

Shinobi is a game of martial arts mayhem where Jackie Chan meets the Water Margin in a sideways scrolling, multi-plane arcade beat 'em up. This was originally a Sega coin-op, and has been converted to your CPC quite faithfully in most respects.

You play the part of the slanty-eyed human killing machine (hmm, sounds familiar), who is out to rescue children from the clutches of the evil gangsters. What children, and where are their foster parents? Well, never mind, coin-ops usually have the depths of your average TV movie, so I don't suppose it really matters. What you pay for here is good old fashioned beating action.

Each level must be completed within the time limit, or it's victory to the forces of the programmer. To complete a level you must not only get to the end of the section, but also collect all the children along the way. To aid you in this infant quest there is a counter detailing how many nappy rash victims there are to go. Quite where you store all these children is, of course, superfluous to the plot.

There are generally two levels of action, street level and rooftop. To help you get to the rooftops there are crates stacked on top of each other, behind which there is invariably a bad guy.



You can jump up in the air, and thankfully throw shurikens while you're doing it, crouch down, stroll along and kick people in the noodles. The good part of crouching down is that you avoid bullets that gangsters shoot at you, and yet can still shuffle along, and kick at people.

You are armed with shurikens and can loose off quite a few at one go. Unfortunately, this is obviously a planet with very heavy gravity because they don't travel much faster than you do.

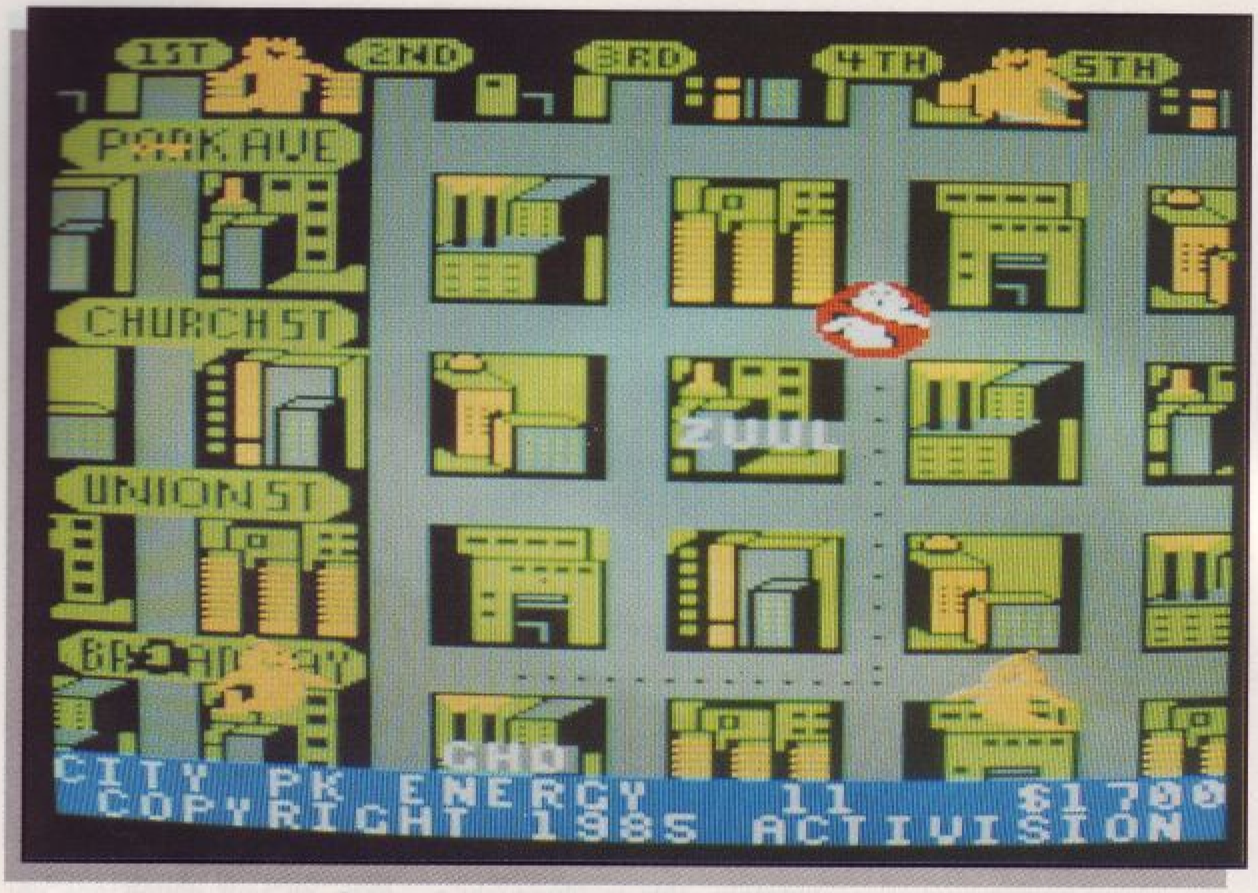
Jumping onto the rooftops is not too easy, but clearing the first level is certainly easier than the arcade game. What you really have to watch out for are the spidermen who perch on the walls of buildings and can drop on you if you are not paying attention. They do not move until you pass underneath, so give 'em some sharp steel before they get the chance.

At the end of each level there is a nightmarish encounter with a very large person indeed. He throws homing missiles at you and is very, very difficult to overcome. Timing is the key to success here, since standing there and trading blows is invariably fatal. The graphics are quite good in a chunky kind of way and the scrolling in both directions is fast if not smooth. There's just the right feel to the character to enable accurate manouvres and yet still have parts that are quite hard to complete. This isn't as good as Dragon Ninja but it's the best release since the Ocean game came out.

Mark Luckham

ROUND-UP

NAME	Shinobi		
SUPPLIER	Virgin Mastertronic	PRICE	£9.99
70%	65%	80%	77%
GRAFFIX	SONIX	PLAYABILITY	OVERALL



The Story So Far - Vol 4

Another Elite compilation of six games including Ghostbusters, Aliens and Back to the Future.



The Story So Far – Volume 3 never made it to the CPC format but *Volume 4* has. It contains two of my all-time favourite games – *Ghostbusters* and *The Eidolon*, which for me make the whole package worthwhile. The four other games which complete this package are *Wonder Boy, Quartet, Back to the Future* and *Aliens*.

It is not your everyday variety of alien roaming an isolated planet on the edge of reality. This seven-foot, man (and woman) eating, acid-spitting hard guy with an attitude problem is really mean; there are also lots of him and they are after you. You take control of six troopers (including the memorable Ripley), and you must explore the abandoned colony seeking out and destroying the alien queen.

The gameplay consists of scanning corridors, blasting doors and wasting aliens. Not an award-winning game but worth playing if you like losing yourself in endless identical two-colour corridors.

Wonder Boy (not related to the sidekick of the caped crusader) describes the sickly sweet exploits of a young hero on a quest for his princess. Run along a horizontally scrolling landscape throwing rocks at giant snails, jumping for fruit and daring precipices. If you are into cute characters and soppy-looking hostiles you will love this one.

When the going gets tough four heroes set forth to crack some skulls. Terrorists have taken over a space station and the only hope of liberation comes from a group of youngsters known as Quartet. Unlike the arcade machine you can only control two of the characters simultaneously. As the characters jump around the screen, they pick up many unexplained objects and blast away at end-level monsters before hitting the exit and going for it one more time. Not the best program in the package and quite possibly the worst.

Back to the Future is arcade adventure with some spectacularly bad graphics. The plot follows the exploits of the young hero trying to get his parents together. Not an outstanding game but worth straining a few brain cells over, if you happen to wake up chained to your bed.

The Eidolon and Ghostbusters come next because I could not resist saving the best until last. Ghostbusters sees our heroes tearing around the city in a customised ghostmobile sucking up ghosts and guiding them into traps with proton beams. If you do really well you get to go one-on-one with the marshmallow monster.

The discovery of a time machine leads to high adventure in the Eidolon. Exploring a long-forgotten cave system, you must seek out the guardians of the crystals. When you have both the crystals and the courage you confront the dragon, a fearsome beast that guards the exit to the next level and untold adventure there. A mixture of style and quality which will keep you occupied for hours… and that is just loading the games.

Adrian Pumphrey

ROUND-UP			
NAME	The Story So Far – Vol 4		
SUPPLIER	Elite	PRICE	£9.99
69%	58%	73%	70%
GRAFFIX	SONIX	PLAYABILITY	OVERALL

Moving Target

In this topical romp you are pitted against evil drug barons with their troops and dogs.

As the last surviving member of an elite commando hit squad, it is your task to bravely tread where psychos fear to go. Armed only with a Uzi you brave the terrors of the drug barons with their deadly troops and dogs. These canines wag their tails before ripping at your throat, so have no qualms about filling them with lead.



You must locate and arm the bombs left behind by your recently deceased colleagues in order to rid the world of the South American cocaine menace. To do this you first have to find the bomb and then search out the corresponding detonator. You will encounter many obstacles during your quest, but few prove as effective as a locked door. Although any key will open a door, these precious items are few and far between; it is often better to explore the landscape to determine a route around a door rather than use a key.



There are seven levels to the Duke's den of iniquity, and as you descend into its murky depths the troops become increasingly hostile. On the early levels they are content just to walk into you but on the deeper levels they develop a taste for shooting at you. A single burst from your Uzi is enough to handle the toughest of guards, but the over-friendly dogs are another matter entirely. A sustained burst deals with the canine menace but if you are trapped in a small area with a dog, some quick and careful manoeuvring is needed to bring your gun to bear. If these were the only hazards you faced you would have little to fear. Unfortunately, however, life is never that simple, and it has a few surprises in store. Leaping from one screen to another with Uzi blazing may look very dramatic but the effect loses something when you come down in the next screen on top of a land mine. Further embarrassments can arise when dashing on to a screen only to come face to face with a twin-barrel cannon blasting as if it was the fourth of July. Perhaps the worst of the obstacles and the most apparently innocuous is the barbed wire. You nearly always hit the wire when you jump over it, and if you are unfortunate enough to land *on* the wire, you can find yourself trapped, with your life-force draining at an alarming rate.

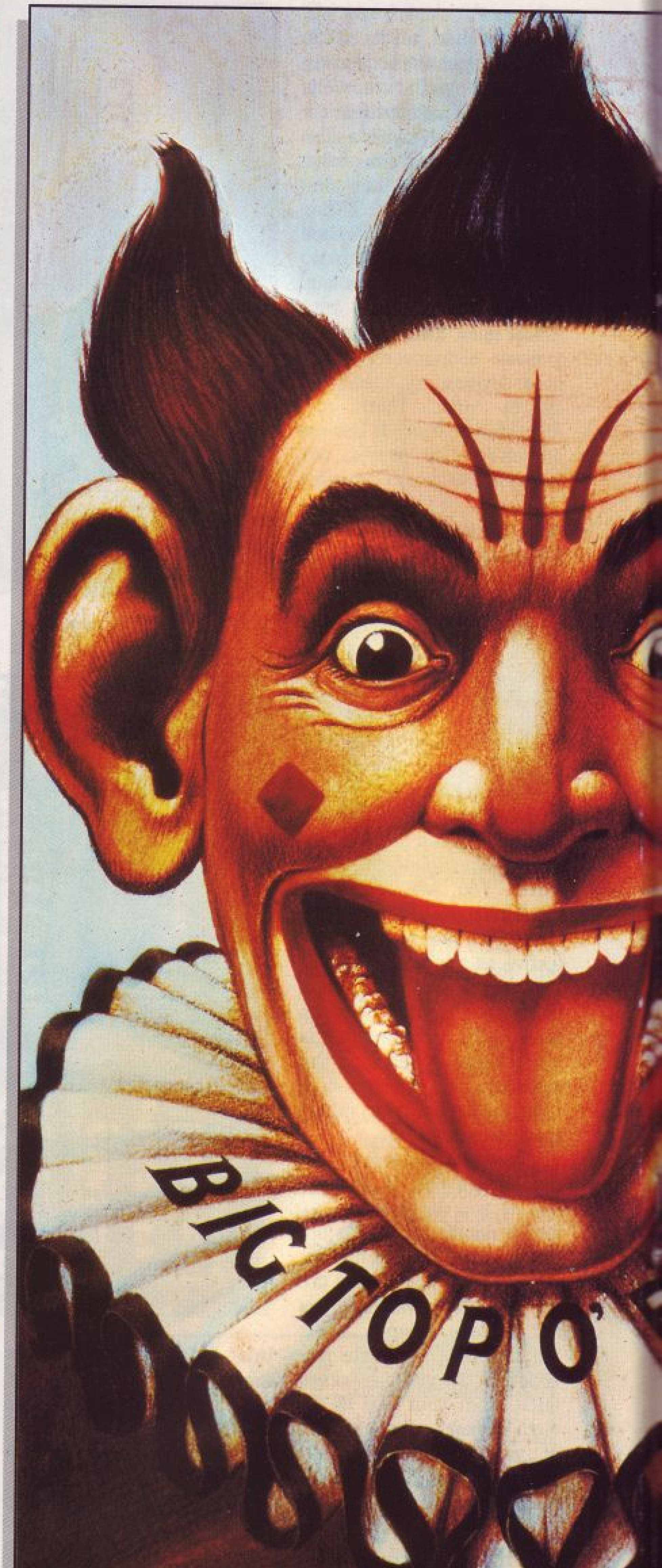
As well as keys, food and extra ammunition can be found en route. Ammunition is vital to the operation of your gun and the food is used to top up your dwindling life-force. For every fifty opponents you kill, you get a choice of extra ammunition, food or a 900-point bonus.

The action is fast as the thud-a-thud-a-thud of your Uzi is matched by an endless stream of bad buys. If you can avoid landing on the heads of dogs and mines, you may just live long enough to see how large and colourful this computer world really is.

Adrian Pumphrey

ROUND-UP			
NAME	Moving Target		
SUPPLIER	Players	PRICE	£2.99
78%	75%	83%	76%
GRAFFIX	SONIX	PLAYABILITY	OVERALL





Fiendish Freddy's Big Top O' Fun

Save the circus from the clutches of the greedy bank, but watch out for that clown with the evil smile.

When the greedy bank calls in its debts it takes no chances. The circus must pay back $10,000 or lose everything. The land upon which the circus stands is worth a fortune and the bank means to have it. To prevent prompt payment by the circus, the bank have sent along a representative in the guise of the clown Fiendish Freddy. As the circus goes about its business, Freddy goes about his with bomb, knife and a devious sense of humour.

The game starts as it means to go on, with a laugh. A cartoon style animation sequence shows the circus owner receiving the ultimatum from the bank and the arrival of Freddy. After selecting the number of players it is on with the show. There are six performances with which you must raise the money. After each performance a panel of judges decides the worth of your efforts in hard cash. The judges themselves put in a pretty good performance as they make rude noises, throw pies and commit a variety of violent acts against one another. At first the events may seem a little on the hard side but a practice mode allows a few dry runs before the show begins.

The game starts with a splash as Horace risks life and limb in the high dive. As Horace hurtles through the air performing various manoeuvres he must keep his sights firmly on the water container below. Missing the container not only results in the end of the event, but a flat Horace. As the performance goes through its paces





the container reduces in size from a large tub to a tea cup. Freddy pops up occasionally in this event with a fan which he uses to blow Horace off course.

My favourite act is the juggling which to my mind is the funniest and most demanding of the events. Jeffy-Joe balances upon his unicycle juggling the objects thrown to him by the sealion but when Freddy tempts it with a fish, things become a little hairy. Juggling chainsaws and babies is relatively



easy but when Freddy introduces bombs and torpedoes you drop them at your peril.

The trapeze act reminds me of the rope scenes in the game *Hunchback*. Initially you must swing on each rope to gain momentum then it is an act of faith as you let go, do a somersault and make a grab for the next rope. After a few ropes you get to leap through flaming hoops and so on. Hang too long on a rope and Freddy will come along and cut it, introducing Finola the Flying Fuller to her fans the hard way.

Next comes a performance not to be tried at the dining table: knife throwing. As Knancy Knife rotates on the wheel you must hurl knives in her general direction hoping to burst the balloons and not Knancy. Freddy attempts to distract by throwing smoke bombs between you and Knancy. When the final blade has been thrown Freddy unbolts the wheel and Knancy spins off the screen.

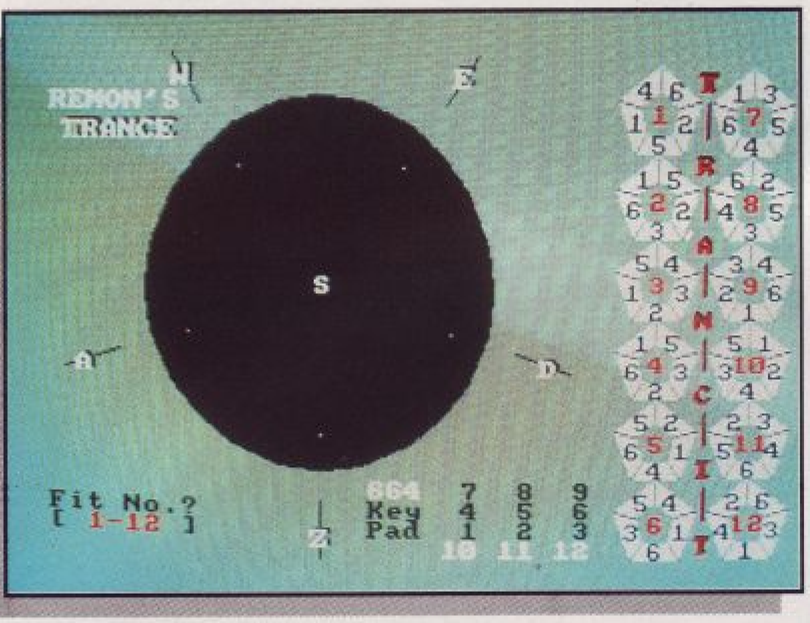
Tony Tiptoe finds life hard enough trying to balance on the trapeze but Freddy is making life downright fatal. On the first crossing Freddy tries to blast Tony off the rope with a cannon and on subsequent crossings with a hail of circular saw blades. When Tony falls, Freddy walks out to where he is hanging from the tightrope. Depending upon his mood Freddy either peels back Tony's fingers or hits them with a mallet.

The final act has more bravery than brains as the human cannon-ball enters the ring. His lovely assistant puts a variable amount of powder in the cannon and then Fernando climbs in. You must set the angle of the cannon and the distance of the target and pray. Missing the target can be painful but not as painful as the spanner Freddy throws in the works if you take too long.

If at the end of the show no player has managed to raise the $10,000 then the circus is doomed and . . . Well I'll let you discover that for yourselves. Fiendish Freddy's Big Top O' Fun is an original game with some superb black comedy sequences. Without Freddy the game would be good but with him it is superb. This is one character that could catch on and we at ACU hope to see him again soon.

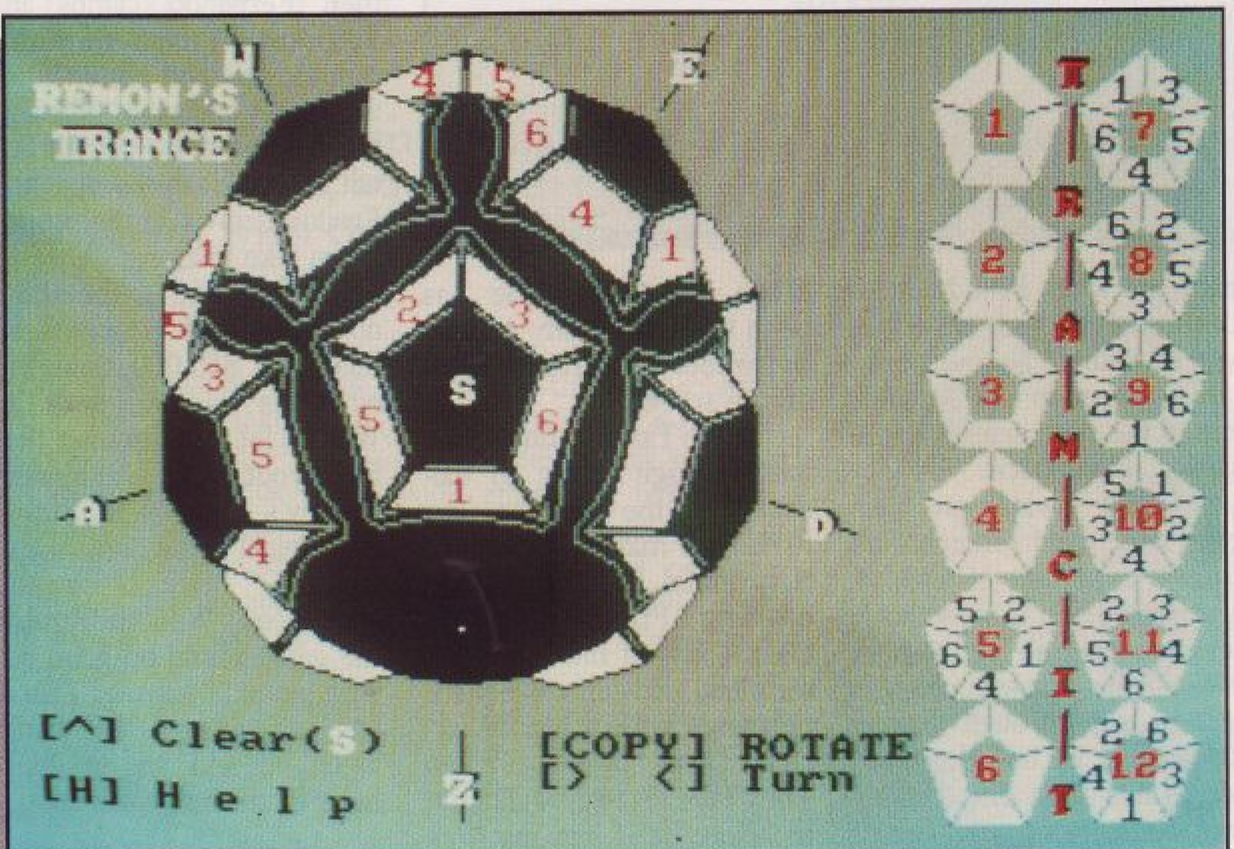
Adrian Pumphrey

ROUND-UP			
NAME	Fiendish Freddy's Big Top O' Fun		
SUPPLIER	Mindscape	PRICE	£9.99
78%	70%	80%	84%
GRAFFIX	SONIX	PLAYABILITY	OVERALL



Trancer

Drive yourself round the bend with this ancient puzzle game of shapes and numbers.



Once upon a time, there was a race of people known as the Transients. This fact has practically nothing to do with the game at all but their story is quite interesting anyway. The man who wrote the instructions to the game has thrown in many titbits from the fictional history of the Transients.

A proud, highly nomadic race, they made use of the written word but had no time to compile a dictionary. This made them exceptionally prone to spelling mistakes and their most important legacy, we are informed, is a writing system devised to inform any reader that the writer was aware of an error but had no time to make the correction. This could well be a excuse for spelling mistakes in the instructions but it could be that the author went mad trying to finish his own game. For example he goes on to tell us that a plague of yellow robot officials armed with wads of parking tickets is a pest in any culture. To be the recipient of such a slip is the greatest shame to a nomad. What this has to do with the game is anybody's guess.

The real game starts when players learn how to go into a State of Trance. This involves fitting and manipulating coloured and/or numbered shapes about a spherical body to make coloured and/or numerical patterns. It sounds very simple but it turns out to be quite fiendish. Players must progress through the many Trance levels to attain enlightenment; always a prize worth seeking but sometimes impossible to achieve. In this case, it means that players must somehow construct a three dimensional object. This will be done mostly in the mind since the screen only shows a two dimensional model.

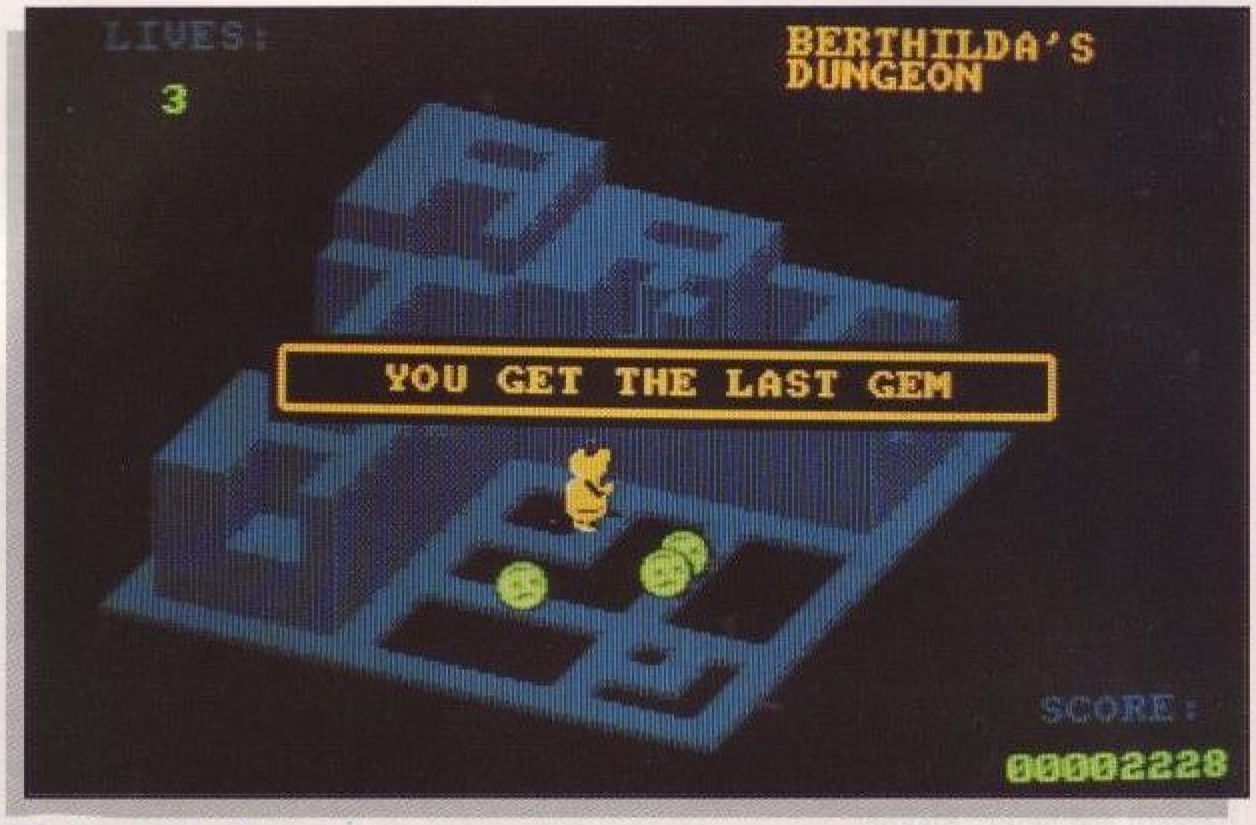
In the unlikely event that anybody finishes the puzzle (and if you do your name is probably Einstein), the position and location of all the components used in the completion of levels 4 and 6 should be transferred to the Prize Entrance Form, included with the game, and sent off for entry into a draw.

All fitting or removal transactions are carried out at the mid position, S. The space to be filled or the piece to be removed is transferred to the centre using a complex series of keystrokes. The alignment of pieces on the ball-shaped body is carried out by using further commands. All this may sound easy, but isn't. No doubt thoughts of the prize will spur on the faint-hearted.

Every copy of the game bought within the next 12 months will increase the prize fund by £1. Life would be made easier if everybody just sent in their £1 and a name was pulled out of a hat. There again, there is bound to be some smart alec out there somewhere with enough IQ to solve it. Everybody else is likely to be driven insane. OK men, you can take me away now.

John Taylor

ROUND-UP			
NAME	Trancers		
SUPPLIER	Remon	PRICE	£9.99
54%	38%	60%	52%
GRAFFIX	SONIX	PLAYABILITY	OVERALL



Crystal Castles

Help Bentley the cute bear pick up gems and avoid nasty creatures in a budget revamp of an old arcade favourite.

Many moons ago, when video games were in their infancy, Atari launched *Crystal Castles*, a fast-moving three-dimensional game which featured a cute bear called Bentley. Running around a maze of blocks, Bentley would collect gems which were scattered around.

But life was not all a bowl of cherries for Bentley, and his progress was hampered by mean and nasty creatures who roamed the mazes, guarding the precious stones. But not all were there purely to stop you, they also had a passion for stones and ran riot eating all the gems they came across.

But all this was years ago, at 10 pence a go. It arrived on home computer formats a little later, and is here again now as a budget title on the CPC.

The first mazes in the game are quite simple and consist of very few complex obstacles, but a little way into the game the going gets tough, very tough. It is not that the mazes are hideously difficult, although they are hard, it is the poor control you have over Bentley; the poor creature seems to lack animation, apart from moving around the maze! What I mean is that his legs seem to be sewn together and the body as a whole shuffles around – quite aimlessly in some cases. He does not stop when you want him to, and sometimes he even runs into the enemy.

There are many different types of enemy creatures which chase you. The mad marbles will work out the shortest and quickest route to you, and advance with alarming accuracy. Tree spirits also take the quickest route to you but are themselves quite vulnerable; if you jump over one, it will be frozen for a short period. The gem eaters can be seen wandering around the mazes eating the gems; disturb them when they are eating and they will self-destruct. Other hazards include skeletons and Berthilda the wicked witch.

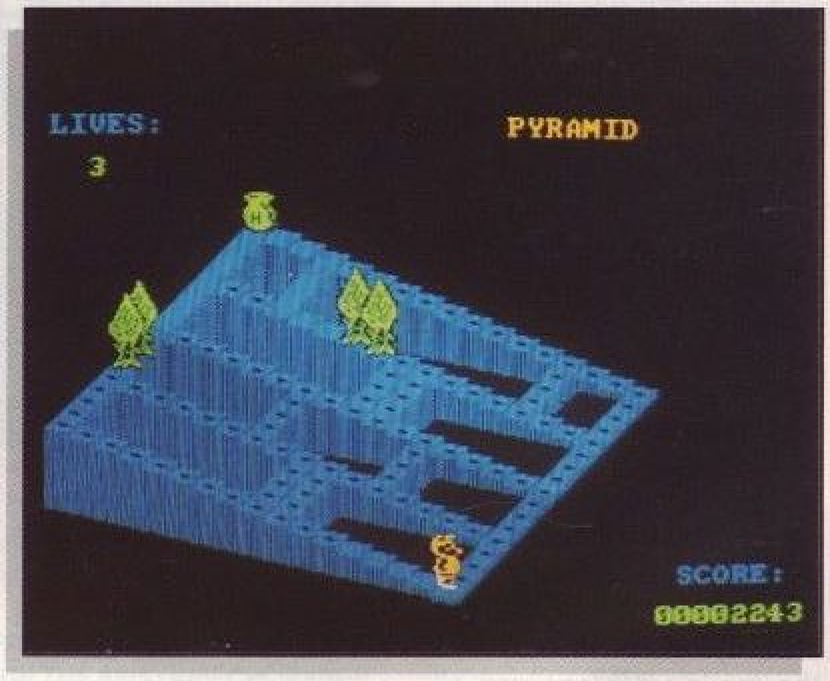
The mazes consist of various platforms, some level, some raised and some sloping. Some of the high levels can only be reached by stepping on a lift.

Paths which disappear behind large blocks in the centre lead around the back of some mazes. But these paths can be used, and anything hidden behind a block appears as an outline.

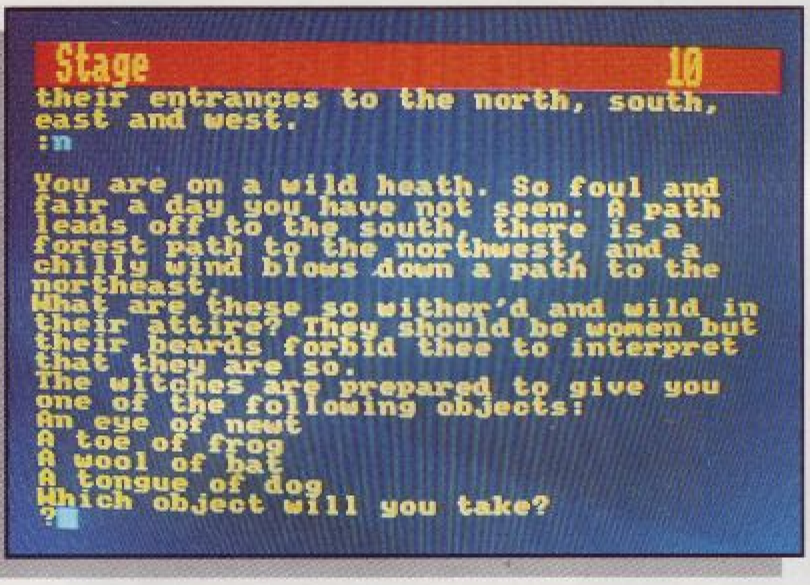
Graphically, Crystal Castles is quite good. The colours have been faithfully reproduced, although they are somewhat wishy-washy in places. It is the animation that lets the game down.

Sound effects too are pretty appalling. When Bentley moves the speaker outputs a mangled mess of audio, which bears little resemblance to anything at all. The temptation to turn the sound off was far too great and I succumbed. The noise gone, I thankfully continued to play. The game itself is quite addictive – if you are able to ignore the poor animation and awful sound, that is. I have seen a lot worse.

Andrew Banner



ROUND-UP			
NAME	Crystal Castles		
SUPPLIER	Kixx	PRICE	£2.99
62%	25%	70%	68%
GRAFFIX	SONIX	PLAYABILITY	OVERALL



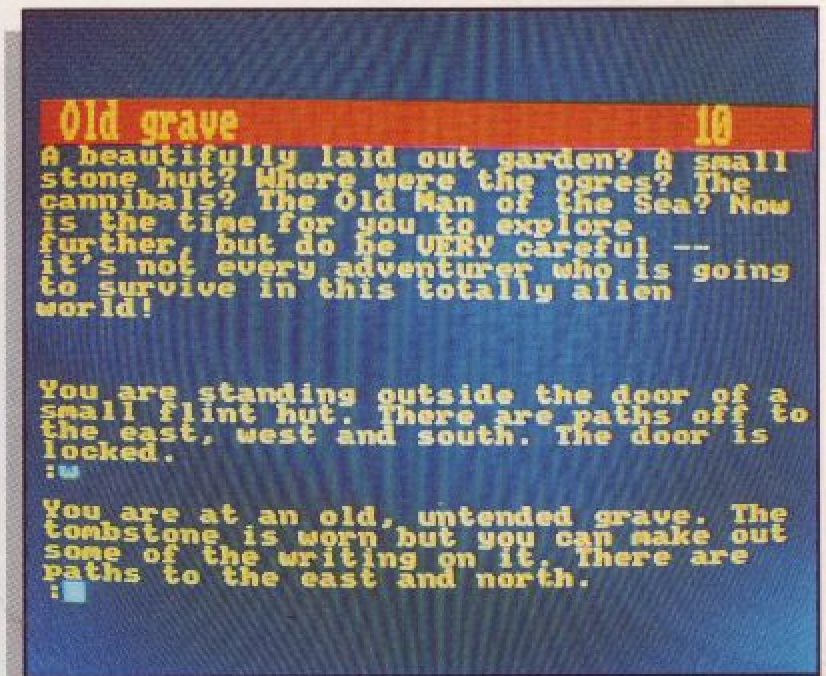
Avon

An adventure game that takes a fun romp through a wacky Shakespearean world of witches and castles.

The blasted heath. The image of desolate mysticism is blessed with a swirling mist and cold, damp soil. A witch. Haggard and bitter. Another witch, old and draped in angst. Another witch makes three, hurly-burlying, bearded, acrid-faced wenches. Transported by complete misfortune into this world of Shakespearian scenes, I am confronted by this image.

An adventure, my mother always told me, should be dealt with head-on, like looking down the barrel of a cannon; this, it seems, is the only way the adventure game *Avon* can be played. You are manipulated, as an unsuspecting individual partaking in customary bouts of tourism, by the theatrical powers of Stratford-upon-Avon and the haunting words of the local bard. Consequently you are sent to the stage. It is here that you are prompted by the poetic eloquence of the Shakespearian word: "All the world's a stage and all the men and women merely players." The prompt offers you a choice of possible directions in which to move. If you write your commands, the computer will provide you with a description of the area you have entered.

Played as an on-screen story, Avon proffers no visual graphics. The game is a continual interaction between computer and player, with a series of questions and commands from each side. The opening sequence emphasises that a knowledge of Shakespeare is not a prerequisite for success in the game, although it states that a familiarity with the plays would add relevance to the scenes encountered. A certain level of common sense is required, as with all adventure games, to ensure that all details are investigated and that the maximum number of objects are collected. Problems arise that test the nerve; they can lead to considerable difficulties in your quest to return to your original era. When faced with a touchy asp, for example, quick and accurate commands are needed to keep you from the grave.



Forsooth, 'tis a distant road down which you ride for the fruits of home life, with many slanderous tongues along the way. Take heed to take care of your goods and return to the salad days when you were green in judgement. The game goes on.

Avon is packaged with another adventure game of the same style, entitled *Murdac*. The game is on the reverse side of the disc and commands the same format as Avon. The story however, is different and leans more into the sublime of a mystical fantasy. Isolation. A forest of confusion with paths heading out in all directions with nothing but the universe as an obstacle. The problems are just as great in Murdac with the Astrologer's sanctum, the old man of the sea, monsters and various other ethereal enigmas threatening death and hampering progress.

Both games are easy to load and operate and they actually have an on-line 'Help' system which can provide you with solutions to the more irksome obstacles. The pack also includes an introduction and technical guide, coded hint sheets and a somewhat grandiose postcard of Stratford-upon-Avon.

If you are a regular player of adventure games then the desire to take up a challenge may be enough to convince you to indulge. If not, Avon and Murdac will provide a simple introduction to a popular trend in computer games. The fact that there are no visual graphics may annoy many and as a consequence invoke boredom or frustration. Only the will to succeed can take you through such recreation. Our revels now are ended. These actors, as I foretold you, were all spirits and are melted into air, into thin air. Exeunt right.

Basil Bread

ROUND-UP			
NAME	Avon		
SUPPLIER	Topologika	PRICE	£9.99
20%	10%	65%	45%
GRAFFIX	SONIX	PLAYABILITY	OVERALL

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The hacks don't come any hairier than these.



Reading it again are you? Sucker for punishment, or wot? Well, welcome to the bit that gives you a passport to the high score tables.

My mailbag truly overfloweth this month, so we've got a lot to get through, including a bucketful of stuff from an Andrew Price, down in dynamic Dunstable. He's sent in a disc, which he's going to get back, with pokettes for the latest release of *Game Over* by Summit, *Kokotoni Wilf*, *Shockway Rider*, *Harrier Attack*, and yet another poke for *Cybernoid II*. A few odds 'n' sods for Multiface owners are in there, and some more keyword pokes.

The Summit version of Game Over is a new release, so the old pokes won't work on it. This might explain a few puzzled letters in the mailbag, and is something for you folks to look out for when blaming me for duff pokes.

Andrew's version gives infinite grenades and lives, and he's also mentioned in passing that the next planet of Sckunn has a password of 10218. I think we've told you that before, but it doesn't use much ink to tell you again.

See Fig 1.

For a happier and hairier Harrier, Andrew has conceived a mix 'n' match pokette with fast-fall bombs, no enemies, an afterburner, eject and fly features and a little more. In all, six pokes in one, and here's the one:

See Fig 2.

Very proud, is our Andrew,of his hackabout of Kokotoni Wilf. To get a jewel, you find a baddie, and give him a poke. Baddie turns into a jewel, which you grab and run off the screen. When you run back on the screen again, there'll be more baddies to kick, and so on until you get enough jewels to warp out to the next time zone.

To make life easier, the baddies have been superglued to the spot. Type this in and get superglued to your joystick

See Fig 3.

Andrew's Shockway pokette does not make you totally invulnerable to

```
1 ' Game Over Cheat - new Summit label
2 ' by Andrew Price
3 ' Amstrad Computer User
10 FOR ad=&40 TO &5B
20 READ a$:POKE ad,VAL("&"+a$)
30 NEXT
40 DATA 21,E9,90
45 DATA 3E,C3,77
50 DATA 23,3E,51
55 DATA 77,23,3E
60 DATA 00,77,CD
65 DATA 88,90,3E
70 DATA 00,32,56
75 DATA 08,32,64
80 DATA 23,C3,94
85 DATA 8E
90 MEMORY &8FFF:LOAD"C",&9088
95 MCDE 0:CALL &40
```

Fig 1.

```
1 ' Harrier Attack Pokes
2 ' by Andrew Price
3  '  Amstrad  Computer  User
10   MEMORY   &7FFF:LOAD"!harier   attack",&8000:LOAD"!harrier
attack",&8A00
20  MODE  2:INPUT"straight down bomb";y$:IF  LOWER$(y$)="y"  THEN
POKE &8BA3,0 ELSE 30
30 INPUT"new easier level";y$:IF LOWER$(y$)="y" THEN POKE &A0C4,0
ELSE 40
40  INPUT"enemy  planes";y$:IF LOWER$(y$)="n" THEN  POKE  &A618,0
ELSE 50
50  INPUT"constant  full speed";y$:IF  LOWER$(y$)="y"  THEN  POKE
&A7BE,0 ELSE 60
60  INPUT"eject  and  still  be  in  control  of  plane";y$:IF
LOWER$(y$)="y" THEN POKE &9123,&56 ELSE 70
70  INPUT"plane  engine fx off";y$:IF  LOWER$(y$)="y"  THEN  POKE
&A88E,0 ELSE 80
80 CALL &9111:' execution address
```

Fig 2.

```
1 ' Kokotoni Wilf cheat
2 ' by Andrew Price
3 ' Amstrad Computer User
10 DATA 3E,16,11,FA,00
20 DATA 21,00,A4,CD,A1
30 DATA BC,21,AB,A4,3E
40 DATA C3,77,23,3E,1C
50 DATA 77,23,3E,B0,77
60 DATA C3,00,A4,FD,E5
70 DATA DD,E5,D5,E5,C5
80 DATA F5,3E,38,32,4B
90 DATA 59,AF,32,6E,41
100 DATA 32,76,41,32,1D
110 DATA 59,3E,3E,32,2E
120 DATA 55,3E,06,32,2F
130 DATA 55,21,AB,A4,3E
140 DATA C3,77,23,3E,80
150 DATA 77,23,3E,3B,77
160 DATA F1,C1,E1,D1,DD
170 DATA E1,FD,E1,C3,AB
180 DATA A4
185 ch=0
190 FOR ad=&B000 TO &B055
200 READ a$:a=VAL("&"+a$)
210 ch=ch+a:POKE ad,a:NEXT
220 IF ch<>&272E THEN PRINT"error":END
230 CALL &B000
```

Fig 3.

chains, lead pipes etc, but should you get clouted by one, you go straight to the next level, with all your lives intact, and with the bonus too!

I loved Shockway Rider because of its gruesome termination scene. Blood everywhere. This apparently was too much for some people at the time. A compromised version was made with green blood, but I think the real raspberry jam-like article made it through in the end. Andrew's version looks a lot like this:

See Fig 4.

```
10 REM Shockway Rider cheat
20 REM by Andrew Price
30 REM Amstrad Computer User
40 cheat=0:MEMORY &9FFF
50 FOR ad=&B000 TO &B042:READ a$
60 a=VAL("&"+a$):cheat=cheat+a:POKE ad,a:NEXT
70 IF cheat<>&20A8 THEN PRINT"Error":END
75 PRINT"Insert Shockway then press a key":CALL &BB18
76 CALL &B000
80 DATA 3E,16,11,BA,1C
81 DATA 21,D0,07,CD,A1
82 DATA BC,21,6A,08,3E
83 DATA C3,77,23,3E,1D
84 DATA 77,23,3E,B0,77
85 DATA C3,D0,07,C9,F5
86 DATA C5,E5,D5,DD,E5
87 DATA FD,E5,3E,00,32
88 DATA 8E,7D,21,6A,08
89 DATA 3E,CD,77,23,3E
90 DATA 16,77,23,3E,BD
91 DATA 77,FD,E1,DD,E1
92 DATA D1,E1,C1,F1,C3
93 DATA 6A,08
```

Fig 4.

Cybernoid II always seems to get a lot of attention, and Andrew must have the definitive disc poke for it. This one has everything. OK, maybe it hasn't got a Suzanne Mizzi pin-up, but it has got invulnerability, infinite lives, infinite weapons, baddies with jammed guns and superglue on their feet. The phrase 'like shooting fish in a barrel' springs to mind:

See Fig 5.

```
10 REM CYBERNOID II POKES
20 REM DISC VERSION
30 REM BY ANDREW PRICE 1989
40 REM AMSTRAD COMPUTER USER
90 MODE 1:GOTO 220
100 FOR addr=&A5A9 TO &A5C8
110 READ pok$:pok=VAL("&"+pok$)
120 POKE addr,pok:NEXT addr
130 DATA 3E,00,32,29
140 DATA 01,3E,C9,32
150 DATA DA,28,32,A4
160 DATA 38,3E,C3,32
170 DATA 0C,2B,00,AF
180 DATA AF,AF,AF,3E
190 DATA 00,32,2F,16
200 DATA C3,00,01,00
210 GOTO 240
220 LOAD"DISC
230 GOTO 100
240 CALL &A410
```

Fig 5.

Multifaces cannot be had for love or money now, but for those lucky beggars who got them before the crackdown, Andrew has got yet more goodies. All the previous pokes are there in easy to digest form, plus a few new ones.

Kokotoni Wilf
&594B &56 When you touch a
&416E 0 baddie, you get
&4176 0 a jewel.
&591D 0
&552E 3E
&552F 6

Eagle's Nest &1790 0 Infinite ammo

Game Over &1F7C Infinite lives
&46E 0 Infinite grenades

Shockway Rider &7D8E 0 Go to next level when hit by baddie

SAS Combat Sim &44AD 0 Rapid fire
&49AA 0 No enemies on end of level 1
&3286 &FF Lots of lives
&238B &FF Lots of grenades

Sidearms &686 &FF Lots of lives

Street Fighter &944C 0 9999 time limit

Bionic Commando &EFB &FF Lots of lives

Paperboy &BE81 &FF Lots of lives

Batty &4518 0 Infinite lives

Galactic Plague &4579 0 Go to next level when hit

Finally Andy's little marathon poking session is rounded off nicely with a few keyword pokettes.

The following keywords are either typed in to the high score table, or entered while the game is going in full flight. I'm not sure what they all do, but he tells me that they'll all confuse something:

Grand Prix Simulator
TRACKx – x is track A to M
COMPLEX
CHEAT
HELP
PANDA
SPECTRUM
SOMEBODYTRACK
HEREROBIN

Super Stuntman
LIVEWIRE

Cybernoid II
ORBY

Very well done there Andrew. The Ed has been told of your efforts, and will be sending something to you. Maybe it will arrive in time for Christmas.

Chris Wootton, he of Mornington in Downunderland, is still posting the pokes round half the world (help Australian re-forestation. Plant an acorn upside-down today). Three shining pokes this month: two off *They Sold a Million* disc, and one off *They Sold a Million 2* disc.

First off from the starting blocks is a poke for *Daley Thompson's Decathlon* on Tsam1, giving you infinite lives. Infinite lives? By heck, the competition must be getting tough these days. Either that or they're keeling over from steroid overdoses. Anyway, have a dose of this:

See Fig 6.

Poke number two is for *Beach Head*. It convinces the chancellor to give you an infinite budget for new ships on the air and sea stages. With this lot you ought to be able to stop the nasty enemies from stamping all over your sandcastles:

See Fig 7.

The last Wootton-poke is for the Bruch Lee off of They Sold a Million 2. Shouldn't that be 'They Sold Another Million'? Anyway, whatever it should be, this is what a poke for it looks like:

See Fig 8.

These pokes are all run the same way: Save the poke on a blank disc, load the poke, stick the disc with the interesting game on it in the drive, and type RUN. Then, when it fails to work, write to anyone but me. All clear?

Thanks for the gems, Chris. Usual bribery and corruption on its way to you by post with the speed of a pregnant wombat.

Well, I'll be back before Christmas with a stack more goodies. Don't forget to avoid the Christmas rush; send all your presents and contributions (however large) to me early and I'll try to squeeze 'em in.

Just a thought before I softly and silently vanish away in the bottom of your magazine rack, folks. Now that devices to copy protected software are illegal, what are tape duplicating houses going to use?

Love 'n' stuff, Vax.

```
1 'Chris Woottons
2 'Daley Thompson disc poke
5 '
10 MEMORY &9C40:MODE 1
20 LOAD "daley.sbf",&9C40
30 FOR A=&BF00 TO &BF10
40 READ A$:POKE A,VAL("&"+A$)
50 NEXT:CALL &BF00
60 '
70 DATA 21,08,BF,22,6A,9C,C3,40,9C
80 DATA 3E,A7,32,75,7B,C3,80,65,00
```

Fig 6.

```
1 'Chris Woottons
2 'Beach Head disc poke
5 '
10 LOAD "beach.sbf",&FE00
20 FOR A=&BE80 TO &BE94:READ A$
30 POKE A,VAL("&"+A$):NEXT
40 CALL &BE80
50 '
60 DATA 21,89,BE,22,50,FE,C3,00
70 DATA FE,3E,C9,32,B2,99,AF,CD
80 DATA 0E,BC,C3,80,B2
```

Fig 7.

```
1 Bruce Lee Disc Poke
2 By Chris Wootton
3 '
10 MEMORY &14FF
20 LOAD"PICT.SDS"
30 CALL &1500
40 LOAD"BCODE1.SBF",&1500
50 LOAD"BCODE2.SBF",&8C00
60 POKE &64F1,0
70 CALL &5800
```

Fig 8.

Snow fun

John Kennedy tries to inject some early seasonal cheer.

As winter closes in and the season of goodwill, presents, alcohol and TV repeats approaches (and only seven weeks to go before Christmas) I thought I would write a little program to delight all those of you with an interest in silly graphic routines. The machine code I proudly present you with will scatter any display you wish to put on the screen with liberal quantities of snow. What is more, you have a choice of two different types: synthetic snow or the real, settling, white stuff.

Synthetic snow is the sort of snow you see on television. You know the kind I mean; actors come in from a sudden snowstorm covered from head to foot in a white powder which has completely vanished by the next scene. (This is not to be confused with dandruff.)

The real stuff will settle into huge heaps that have to be cleared away in the morning with a quick CLS or MODE statement.

As a special treat, not only have we listed the customary assembly language listing for you to type into the assembler you are hoping Santa will bring, but we have even given you a complete Basic program that will produce a pleasant little display for you.

The Snowstorm program is a perfect example of modularisation and the speed of machine code over Basic. Writing a similar program in Basic would be a waste of time, as the snow would seem to be crawling around like bacteria instead of drifting smoothly




```
10 ' Christmas Machine Code Listing  [F1]
20 '  [F2]
30 MEMORY &7FFF [3A]
40 DEFINT a-z [BD]
50 t=0:a=&8000:FOR b=1 TO 145:READ c$:d=VAL("&"+c$) [A1]
60 POKE a,d:t=t+d:a=a+1:NEXT b [82]
70 READ s:IF t<>s THEN PRINT "Error in data !":END [F1]
80 MODE 1 [EB]
90 INK 3,23:INK 2,26:INK 1,6 [14]
100 FOR l=0 TO 16:READ a$ [48]
110 LOCATE 1,1:PRINT a$ [78]
120 FOR x=0 TO 16 [41]
130 FOR y=398 TO 382 STEP -2 [64]
140 PLOT (l*40)+(x*2),(y-380)*8,TEST(x,y) [E4]
150 DRAWR 0,16 [5D]
160 NEXT:NEXT [0A]
170 NEXT [3B]
180 CALL &8000 [6E]
190 DATA CD,14,80,CD,20,80,CD,2B,80,3E,42,CD,1E,BB,C0,CD [F7]
200 DATA 19,BD,18,F2,21,80,C7,06,50,3E,FF,77,23,10,FC,C9 [1B]
210 DATA 11,93,80,06,32,CD,58,80,10,FB,C9,11,93,80,06,32 [53]
220 DATA CD,36,80,10,FB,C9,1A,6F,13,1A,67,1B,3E,00,77,E5 [41]
230 DATA CD,26,BC,E7,FE,00,20,0B,F1,3E,01,77,7D,12,13,7C [F4]
240 DATA 12,13,C9,E1,3E,FF,18,00,CD,63,80,7D,12,13,3E,C0 [C6]
250 DATA 12,13,C9,F5,C5,D5,ED,4B,91,80,2A,91,80,CB,25,CB [6D]
260 DATA 14,09,44,4D,CB,25,CB,14,55,CB,25,CB,14,CB,25,CB [A6]
270 DATA 14,09,44,4D,62,2E,29,B7,ED,42,22,91,80,D1,C1,F1 [C7]
280 DATA C9,16249 [49]
290 DATA H,a,p,p,y," ",C,h,r,i,s,t,m,a,s,!," " [F2]
```

The Basic program (above) and the assembly listing (below and continued on pages 49 and 50).

```
; How the program works:

;set up the screen.

;set up initial positions of the flakes.

;repeat until ESCAPE pressed;

;               for all flakes;

;                               erase old flake

;                               update position (ie move it down)

;                               check for obstical in the way

;                               draw new flake

;               next flake

;

wait_frame       equ &bd19
```

```
test_key        equ &bb1e
down_a_line     equ &bc26

org &8000                          ;Start Location of code

call set_screen
call set_table

.loop
        call move_all              ;Move all the flakes.
        ld a,66:call test_key      ;Check for ESCAPE key & if pressed
        ret nz                     ;return to BASIC.
        call wait_frame            ;Smooth out the movement.

jr loop

set_screen                         ;Draw the line at the bottom
        ld hl,&c780                ;of the screen.
        ld b,80                    ;80 bytes in one screen line.
        ld a,255
        ssl
                ld (hl),a:inc hl   ;poke line into place
        djnz ssl
ret

.set_table                         ;Set initial positions of
        ld de,table                ;all fifty snow flakes.
        ld b,50
        stl:
                call set_flake
        djnz stl
ret

.move_all                          ;Move all the flakes, one at
        ld de,table                ;a time.
        ld b,50
        mal:
        call move_flake
        djnz mal
ret

.move_flake                        ;Move a single flake.
```

down the screen.

First we must decide on the number of flakes and how they will be moved. I have chosen to animate fifty flakes, for no particular reason. Instead of using an X and Y co-ordinate to describe their position on the screen, we will use their Screen Address. As you will no doubt be aware from previous discussions, the screen is simply an area of memory that also happens to appear on a visual display unit. By writing directly to this memory we influence what appears on the screen. Writing directly also speeds things up considerably and allows fifty snowflakes to move with no discernable effort whatever.

A table of one hundred bytes is reserved to store all the screen memory address we will use; one of the first things the program must do is initialise this table, by making up random screen addresses. The very first thing the program does, however, is draw a line at the bottom of the screen to stop the snow drifting away and corrupting memory left, right and centre.

We have two main problems to overcome. The first is how to move the snow down the screen. How do we calculate the new screen address? The second problem is how to find out whether the snow has hit the ground or an obstacle.

The answer to the first problem has thoughtfully been provided in a routine which already exists in the computer's operating system. All we have to do is load the HL register pair with the old screen address, call the magic routine and voilà! The new screen address is magically calculated for us.

The second problem is of a slightly more taxing nature. Obviously to decide if the flake has hit something we will have to examine the screen memory at its address. Unfortunately, this presents us with a further small problem. Examining the memory by attempting a LD A,(HL) instruction will not work. This is because it just so happens that a ROM is sitting right slap-bang over our screen memory! Tragedy! How can we read the screen RAM when all we can discover is the contents of an irrelevant ROM? Again the operation system comes to our rescue by providing a special routine

```
        ld a,(de):ld l,a:inc de         ;Get the screen address of the
        ld a,(de):ld h,a:dec de         ;snow flake,
        ld a,0:ld (hl),a                ;and blank it out.

        push hl
        call down_a_line                ;Move the screen address down.

        rst 4                           ;See text!
        cp 0:jr nz,hit                  ;Check for an obstical.
        pop af

        ld a,l:ld (hl),a                ;Draw a new flake, and store
        ld a,l:ld (de),a:inc de         ;its new screen address.
        ld a,h:ld (de),a:inc de
    ret

    .hit
        pop hl:ld a,255                 ;Draw a splatted flake
        ;ld (hl),a                      ;See text!
    jr set_flake

    .set_flake                          ;Create a random start for the
        call random                     ;snow flake.
        ld a,l                          ;This is LSB of screen address.
        ld (de),a:inc de
        ld a,&c0                        ;This is MSB of screen address.
        ld (de),a:inc de
    ret

    .random                             ;The Magic random number generator.

    push af:push bc:push de:ld bc,(seed):ld hl,(seed)
    sla l:rl h:add hl,bc:ld b,h:ld c,l:sla l:rl h
    ld d,l:sla l:rl h:sla l:rl h:add hl,bc:ld b,h
    ld c,l:ld h,d:ld l,&29:or a:sbc hl,bc:ld (seed),hl
    pop de:pop bc:pop af:ret:seed dw 0

    .table                              ;Somewhere to store all the screen
    ds 100                              ;addresses of the flakes.

    list:end
```

to do the job for us. This time the routine is a bit special and is not of the common or garden CALL & address variety. Instead it is what we in-the-know refer to as an RST or RESTART instruction. RESTART instructions are special 'definable op-codes'. To those of us who prefer speaking in English, this means that when the system engineer was designing the way in which the Amstrad CPC was going to work, he decided what would happen if one of these special RESTART instructions was executed.

These are, of course, completely different to all the other instructions that the Z80 uses; they are all totally pre-programmed and can on no account ever be changed, not even by me.

There are several of these RESTARTS, imaginately numbered from 0 to 7. The codes that you would type into your assembler are therefore RST 0 to RST 7. (Note! Some assemblers are a bit picky about this and may try to number the RESTARTS 0,8,16,24,32,40,48,56.) Anyway, the RST instruction that we are going to use is number 4, and this does a LD A,(HL) with all the ROMs switched off.

We may return to RESTART number 6, which has no special function and which is available for us to experiment with.

So we have now solved the problem of looking to see if the snowflake has hit anything. If it has not, then we can continue as before; if, however, something has got in the way, we jump out of the loop and into a routine called HIT, in order to decide what to do next. One instruction here is commented out, and it is this one that determines whether you are using real or synthetic snow. When the line is in place, it will draw a heap of snow on whatever has been hit; otherwise the flake will completely vanish. The choice is yours – unless you do not have an assembler, of course, in which case you are stuck with the fake snow supplied in the Basic listing.

Try typing in the Basic program and loading in some drawings of your own. Using snow on some digitised pictures will produce some extremely strange results!

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In this month's surgery, Dr David Dorn tackles more of your problems with his customary bedside manner.

Back with a bulging bagful

Back again, with another bulging bagful of queries and help. I am most grateful to John R. Hudson, of Huddersfield, who has written in response to my plea for help in *DR Graph* and *DR Draw*. Firstly, regarding E.F. Munroe's problems (*ACU* Oct '89 Applications Advice), John is of the opinion that there are two possibilities. Either Mr Munroe's disc is corrupted, or he may not fully understand how the program works.

Assuming the latter – there is nothing much you can do about a corrupted disc, other than change it – he suggests the following might be of use.

Firstly, the program displays text screens for most menus, and only uses GSX (the CP/M graphics system driver) to display graphs and the annotation screen. John assumes that Mr Munroe's error messages refer to the menuing section of DR Graph. This being the case (and it seems likely), together with the likelihood of Mr Munroe's using a working disc, rather than the original (you are all using working discs on everything, and not originals, are you not?), he should dig out the original disc, and go through the steps for making a working disc again. That should obviate any problems with a corrupt working disc.

Now for the second possibility. John explains . . . "Because DR Graph is over 200k, Digital Research explain in the manual that you should keep as many files as possible on the disc in drive A:, and the remainder on a disc in drive B: (do not forget that these can be the same physical drive – DD). If Mr Munroe is replacing the disc in drive A: with a data disc, DR Graph will still search both drives for its overlay files, and if it does not manage to find them, it will crash."

John suggests that Mr Munroe tries to save a file to drive B:. Digital's instructions, it seems, are wrong on this point, and the drive letter must be included in the filename for the command to work properly.

Once this is done, Mr Munroe should try and re-load it, again remembering to specify the drive letter in the filename – in the form <B:Filename.ext< – and without removing either of the discs from the drives. If he still gets the error message, then his copy of the program is corrupted; if not, he was not using it properly before.

The moral of this is that neither DR Draw nor DR Graph can exist on one disc, so all discs used in drive B: should have on them the files that would not fit on the drive A: working disc, otherwise an inglorious crash will surely ensue, and that would be about as welcome as a rat sandwich or a poke in the eye with a blunt stick.

John has also included the contents of two files which may be of interest to users of DR Draw and DR Graph. Once again, my thanks go to John without whom none of this would have been possible. His reward will surely be in heaven, or perhaps sooner.

Troubled

In the September issue of ACU, I published a query from Peter Moonen,

who was having trouble with loading *Stop Press* cutouts on his expanded 464 – a problem that doesn't beset 6128 owners. Two respondents have sent in solutions to this problem. One is Lee Cooper, author of the LC10 colour-screen dump featured last month, and the other is one Erik Lensgaard Hansen, a Danish reader. Both have sent similar suggestions. They involve entering the external command option, and exiting back to the program, before attempting to load a cutout.

The process is as follows:

1. Click GOODIES icon,
2. Click COMMAND icon,
3. Press <ESC< to quit command mode
4. Load the cutout with impunity.

Peter, and any other 464 Stop Press users will have to do this every time they want to load a cutout, but they will be able to load as many as the machine and the application will take. My thanks to both Lee and Erik for their timely help.

And just to put Lee's mind at rest, both he and you will have seen that his colour-dump prog was printed last month. He seemed a touch miffed in his letter for this month's column, because he had not seen his previous missive quoted. Well, folks, if you do write to me, all the mail has to come out from head office to sunny downtown Washington, up here on the north-east coast.

Then it has to be researched, sorted, answered, and then the answers typed up and sent back to ACU at least six weeks before you finally get to see it.

So there really is bound to be a delay, and there is nothing you can do about it. Still, I suppose that'st just the price you pay for having my esteemed advice on tap. Imagine the difficulty columnists have trying to get a Christmassy feel when they are writing in the middle of the summer!

Sounds posh

Back to the problems. Mrs J. Kavanagh, of Hayward Gardens in London (sounds posh!), writes with a boatload of questions, aimed more, at the User Club, I think, than Applications Advice. Never mind, here goes. Mrs Kavanagh recently bought her son a 6128, and discovered how long it takes for tape-based games to load. She asks whether there are any games available on disc. The short answer is yes, but nowhere near as many as I would like to see. However, they are available, and the mail order concerns may well be your best bet. It might do no harm, either, to contact the User Club and see what they have on offer.

Mrs K. goes on to ask about what is available in terms of integrated packages for the CPC. Well, the only one of note, Mrs K. is *Mini Office II*, a suite that I personally have never been that fond of, but which offers superb value for money.

Printer link

That gives me a neat link into a letter from P.S. Drage, of Bridgnorth in Shropshire, who has been using MOII since December '88, and has recently acquired a Citizen 180E printer to go with his outfit.

He asks whether there is a good DTP package for the CPC available for £40 or less, and what I would consider to be the best art package for the machine. P.S.D. complains that no matter whom he contacts, he always gets the same advice – 'ours is the best'.

Now, as far as I am concerned, the best DTP package by a long way for the CPC is *Stop Press*, a view that seems to be shared by the majority of the reviewers who have seen it as well as others. To a large extent, though, it all depends what you want to get out of a DTP package.

As it happens, Siren Software also market a good 'almost-DTP' package, by the name of *Micro Design*, and a mouse to match. Whilst not being as powerful as Stop Press, it is capable of turning out some very good results. If you like, the comparison between the two is very much the same as the rivalry between *Pagemaker* and *Ventura* on the IBM PC. Each is very good, but aimed at its own market, and for its own purpose.

Micro Design is an excellent single-page processor, and is uncomplicated to use. Stop Press, whilst also being a page processor, lends itself better than Micro Design to repetitive designing of the printed page. In the end, if price is the important factor, then Micro Design may be the better bet; but if you can stretch to Stop Press, then I would go for that.

P.S.D. adds a little rider to his letter, and yes, my friend, you may be so bold as to ask. Siren have been known to sell mice on their own, without interfaces. In fact Simon Cobb, the MD, will sell you anything he can lay his hands on (Hi Simon!), and usually at a pretty reasonable price! Catch his ad in this issue.

Citizen can't

And from a Citizen 180E to a Citizen 12D, again with MOII . . . Mrs C.K. Bush writes from Felixstowe in Suffolk to tell me that she is having problems driving the printer from MOII's word processor module. To give you some idea of the trouble she is having, read this: 'I have an Amstrad 464 . . . but I am having trouble using MOII Word Processing with my Citizen 120D printer, which I was assured is fully compatible with the CPC 464. My local dealer gave me a list of alternative codes to give commands to the printer, as there is nothing in the printer manual about Amstrad, and the instructions in MOII are so vague as to be useless. After wasting lots of paper, I have cracked some of the codes, and I can now get bold, italics, etc., but I cannot get the printer to underline anything except as a continuous line. Please help! The other and more serious problem is that, as a French teacher (you have my sympathy, Celia), I would like to be able to print texts with the French alphabet. The Citizen manual instructs you to use internal switches or codes. I have tried the internal switches, but do not then know how to get the message from the MO text to the printer. The MOII manual is silent on the subject, and friends and colleagues are as mystified as I am – there seems to be no way of getting hold of a correct code to use as a printer command with the function key. Perhaps there is something blindingly obvious that I am not doing, but please could you assist me, as my use of the word processor in MOII is severely restricted!' Phew! Right, let me try to cover this one step at a time. Firstly, I do not know of any parallel interfaced printer that is *not* compatible with the 464, or any other computer for that matter, given the proper interface. What is more important is its compatibility with accepted standards on other printers, notably the Epson FX/RX80. No matter what word processor you use, it nearly always comes with a printer device, in order to enable it to print to an Epson compatible printer,

MOII is no exception. Failing that it will have IBM printer code compatibility. I know that the 120D is about as Epson-compatible as they come, having used a fair few when I too was a teacher, so driving one should not present a problem. That brings me neatly to the 'alternative' codes you mention in your letter. MOII comes with Epson-compatible codes already set up in it, so the embedded commands detailed in the MOII manual ought to work.

In fact, I have used MOII in a teaching situation with the 129D, and know that it will work, as it comes, straight out of the box. The only thing you must be sure of is that the DIP switches are set correctly on the printer – for Epson compatibility, and nothing else.

As for underlining, I am not quite sure what you are after. If I am right, you wish to underline each word separately. Some printers allow for this, either by sending an escape code to tell it to, or by setting a DIP switch. Again the 120D allows for this; the only other alternative is to fiddle about putting underline-embedded commands before and after each word in your text, which is hardly satisfactory.

Now, to your most serious problem. I am very much afraid that, cheap and cheerful as MOII is, you are asking rather too much of it when you expect it to be able to speak in foreign tongues to your printer. Even if I could give you a very simple method of getting the required codes to the printer, I am sure you would not be satisfied with the results, because it would involve your typing in a set of escape codes each time you wanted to use an accented character, or anything remotely fancy.

That, in its turn, would destroy any sense of WYSIWYG (What You See Is What You Get) in the word processor, and that is in short supply in MOII at the best of times. Quite frankly, what you need is a change of word processor. I say that having been in exactly the same position as you, and I have got a pretty good idea how much time you spend at the keyboard; if you are anything like my wife, you will spend more time there than you do in front of the telly, so a good word processor can only be a godsend.

In this case, because of all of the foreign character sets you will want to use, there is only one choice, in my opinion, and that is *Protext*, either on ROM or on disc. This program (I use no other word processor, on any machine) will give you the simplest access to foreign characters of all the WPs on the CPC, and is probably the best of the bunch in other departments, too. I know this will involve you spending some money, but quite honestly, I do not think MOII is up to the job at all! Database are going to love me now!

Cripes, that is all the room I have for this month. Next month I hope to be able to bring you up to date on the LC10 colour-screen dump situation. I have already got an embryonic one giving 256 colours – never mind eight – now all I have to do is sort it out on the CPC. Till then, keep on writing in, and we will keep trying to answer your queries, oh, and keep taking the tablets. Bye for now!

January preview

Tips for the top

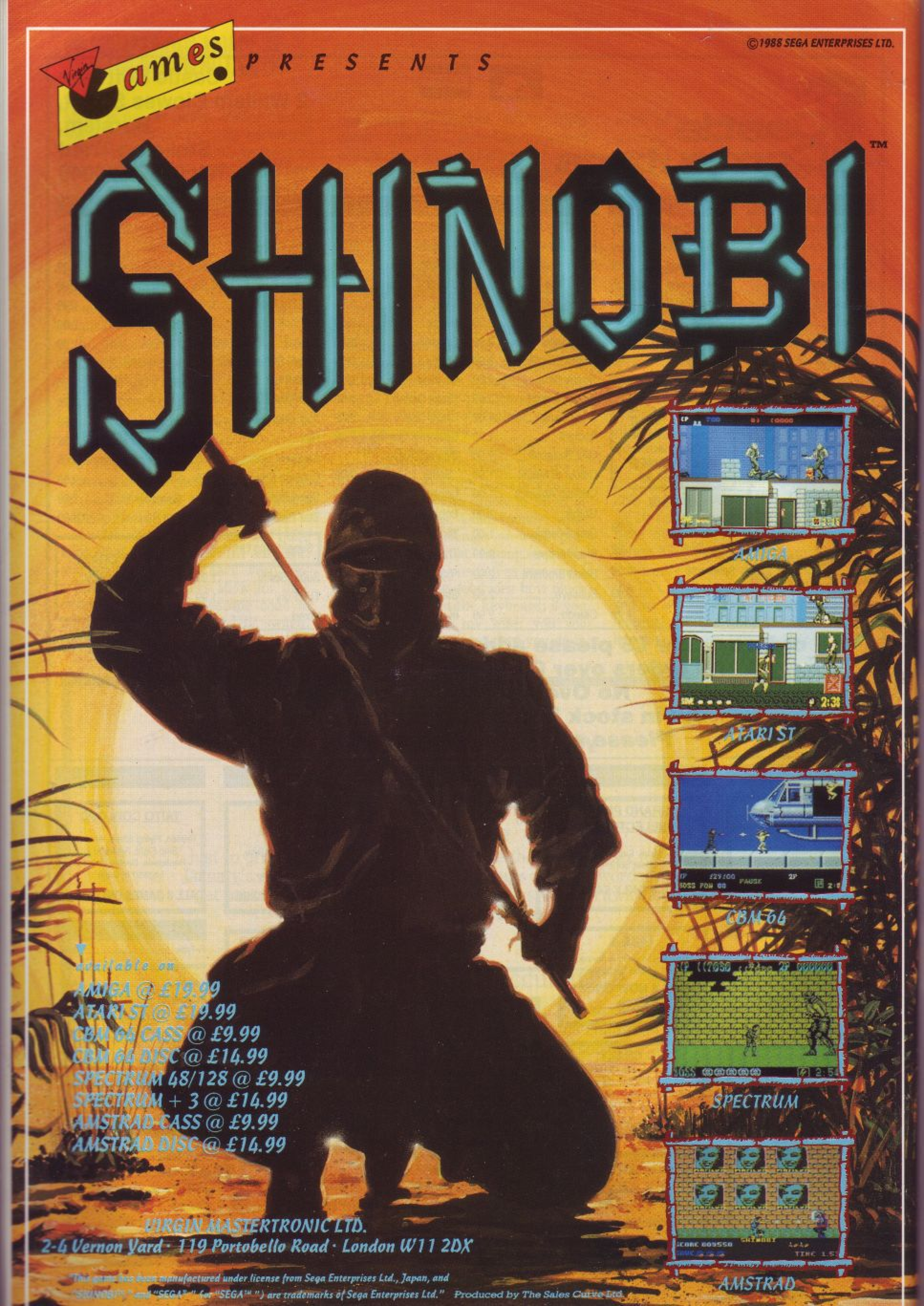
Just to prove what a generous lot we are there will be six full pages in January's ACU devoted to games tips, maps and passwords to help you get past those tricky little end of level monsters and awkward bits in your favourite games of this year.

Communicate to accumulate

Communication never need let you down again. Those of you who have been eagerly following Gordon Bates's new comms column in ACU may now be ready to splash out on some hardware and software to let action speak louder than words. We guide you through some of the leading comms equipment.

Cover game

Well, we'll leave that as a surprise – so don't forget to tune into the best ever issue of ACU for lots of seasonal fun.

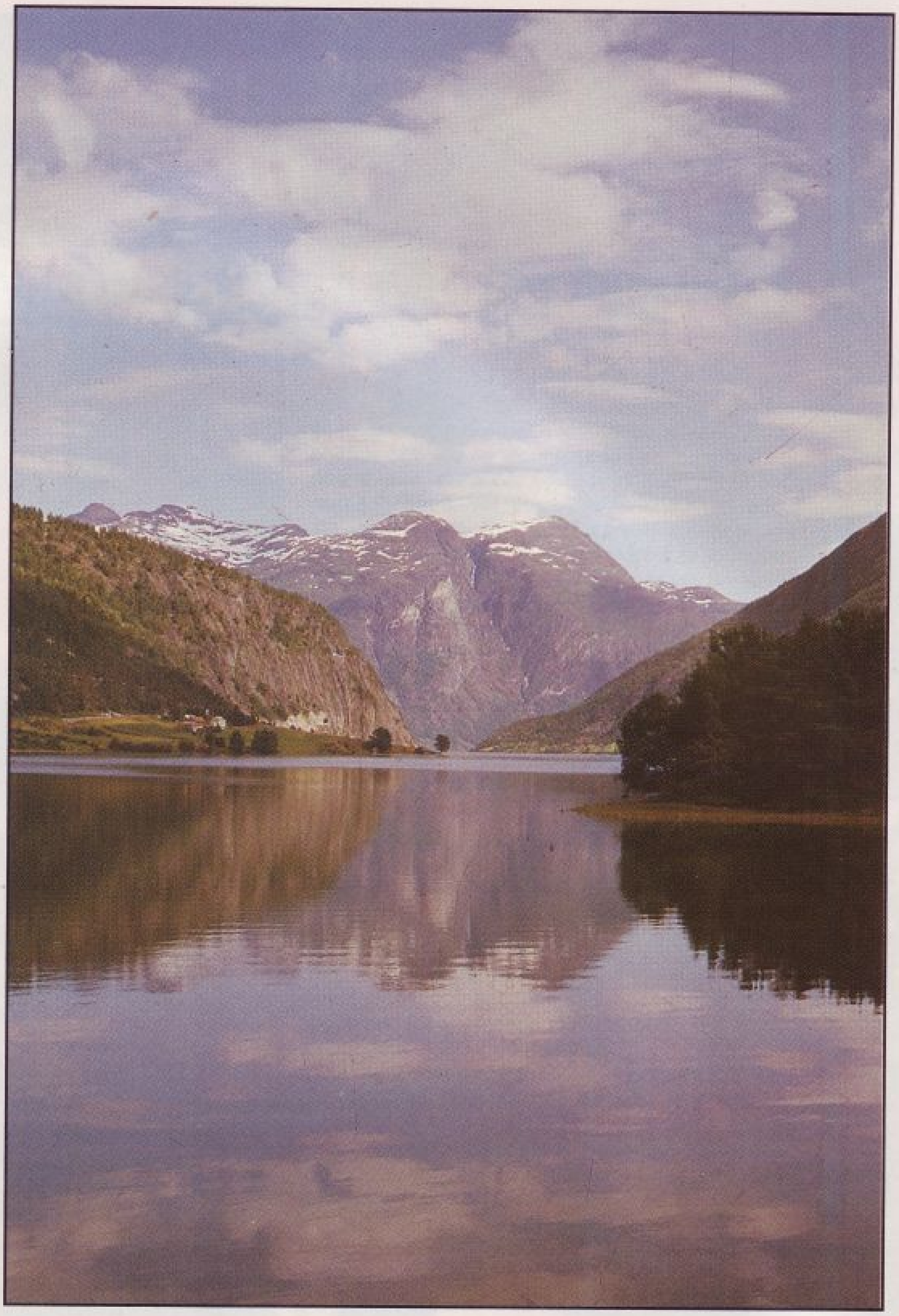


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Virgin Games PRESENTS
SHINOBI™
AMIGA
ATARI ST
CBM 64
SPECTRUM
AMSTRAD
available on
AMIGA @ £19.99
ATARI ST @ £19.99
CBM 64 CASS @ £9.99
CBM 64 DISC @ £14.99
SPECTRUM 48/128 @ £9.99
SPECTRUM + 3 @ £14.99
AMSTRAD CASS @ £9.99
AMSTRAD DISC @ £14.99
VIRGIN MASTERTRONIC LTD.
2-4 Vernon Yard · 119 Portobello Road · London W11 2DX
"This game has been manufactured under license from Sega Enterprises Ltd., Japan, and "SHINOBI™" and "SEGA®" (or "SEGA™") are trademarks of Sega Enterprises Ltd."
Produced by The Sales Curve Ltd.

Generate your own landscape

Dean Cracknell

serves up the second course of his three part fractals recipe.



The Basic program that created the fractal landscape last month takes only a few minutes to calculate and plot the entire fractal. This phase in the creation of the *Landscape Generator* is replaced by a machine-code version that does the trick in a few seconds.

The Machine Code Loader program (Program 1) loads and saves the machine code which, when installed by the Landscape Generator program, adds twelve new commands to Basic's vocabulary. These create the fractal data and generate random numbers for the fractal image. The fractal is now created in memory, rather than in the array 'height', and this memory is between &8000 and &90FF. You can quickly test this machine code by typing the following at the keyboard:

```
MEMORY &7FFF          - reserve space
LOAD "FRA-A.BIN",&9100
                      - load M/ Code
CALL &9100            - Log-on RSX's
:WIPE                 - Clear Fractal Data
MODE 0: :FRACTAL,1    - Calculate
                        and Plot Fractal
```

This will produce the now familiar fractal contour map in the bottom left-hand corner of the screen. Entering:

```
:WIPE: :FRACTAL,1 - Clear, Recal-
                    culate & Plot
```

plots a new fractal over the first.

Program 2 is the first instalment of the Landscape Generator program: type in this program and save it as "prog-1.bas" (part 2 will be listed next month). This will run perfectly as it stands, but does not perform the 3-D image projection (yet). This is an

```
1000 '     Fractal Landscape [81]
1010 '     Generator Program [84]
1020 ' (c) Dean Cracknell 1988 [87]
1030 ' [8A]
1040 '        V1.1 - PART I [8D]
1050 ' NOTE: Do not Re-number the Lines...! [90]
1060 ' [93]
1070 MEMORY &7FFF: DEFINT a-z: BORDER 13 [12]
1080 true=(1=1): false=NOT true [39]
1090 GOSUB 1960 ' load-up and login RSX code [ED]
1100 GOSUB 1640 ' set inks [91]
1110 ' [86]
1120 ' fractal data [89]
1130 size=64: level=64: base=size\level [B0]
1140 iseed = 0: lseed = 0: a=0 ' image seeds [B6]
1150 frm=0 ' image frame number [E1]
1160 ' [95]
1170 ' background & plotting flags [98]
1180 backc=8: horizonc=2: skyc=13: seac=2: curcolour=14: back=false [BC]
1190 showsea=0: sealevel=95: pfill=0: currs=true: curon=false [4D]
1200 back=false: redraw=true: drawit=false: x1=8 [03]
1210 y1=4: first=true: newimage=true: tilt1=&40: tilt2=sealevel: tilt3=&40: tilt
4=sealevel [DE]
1220 ' [8B]
1230 ' 3D projection data [8E]
1240 ystart=144: yend=380: ymax=yend-ystart: yposn=-20 [BD]
1250 yscale=INT(ABS(yposn)*ymax\255): xscale=10*yscale [B0]
1260 xstart=12: xend=592: xmax=xend-xstart: xposn=size\2 [E1]
1270 xoff=xstart+(xmax)\2: elev=20+sealevel ' 20 above sealevel [56]
1280 yposn=-20 [17]
1290 ' leave blank [A0]
1300 md=0: MODE md: GOSUB 1510 ' colour-scale [62]
1310 t1!=TIME ' start timer [CE]
1320 ' [8D]
1330 ' main program loop [90]
1340 WHILE j$<>"Q" [B6]
1350  ' leave blank [96]
1360  ORIGIN 0,0,xstart,xend,yend,ystart [DE]
1370  |SEED.RAND,iseed [8B]
1380  RANDOMIZE PI/(lseed+PI) [70]
1390  GOSUB 1690 ' up-date screen data [F6]
1400  IF newimage THEN GOSUB 1790 [1E]
1410  ' leave blank [8C]
1420  redraw=false: t2!=TIME [E1]
1430  LOCATE xcol,yrow+7: IF t2!-t1!>0 THEN PRINT "Time:";RIGHT$(STR$(10000+INT(
(t2!-t1!)/300)),4);: ELSE PRINT "Time:    "; [6C]
1440  GOSUB 2220 ' scan keys [5F]
1450  t1!=TIME: LOCATE xcol,yrow+7: PRINT "Working   "; [23]
1460  base=size/level [BB]
1470 WEND [5F]
1480 END [41]
1490 '  [A4]
1500 ' Sub 1: Print Colour Scale [8B]
1510 xx=POS(#0): yy=VPOS(#0) [25]
1520 FOR i=0 TO 15 [7B]
1530  IF nums THEN PEN 1: LOCATE 20*(2^md)-2,17-i: PRINT RIGHT$(STR$(100+i),2);
[7E]
1540  PEN i: LOCATE 20*(2^md),17-i: PRINT CHR$(1);CHR$(233); [5B]
1550 NEXT i [08]
1560 PAPER 0: PEN 3: LOCATE 2,1: PRINT "Fractal Landscapes" [70]
1570 PEN 6: LOCATE 2,1: PRINT CHR$(22)CHR$(1);STRING$(18,CHR$(95));CHR$(22);CHR$
(0); [32]
1580 |GPEN,1: MOVE xstart-8,ystart-2 [4A]
1590 DRAWR xmax+16,0: DRAWR 0,ymax+4: DRAWR -(xmax+16),0: DRAWR 0,-(ymax+4) [A7]
1600 PEN 1: LOCATE xx,yy [58]
1610 RETURN [6A]
1620 ' [93]
1630 ' Sub 2: set inks  [96]
1640 FOR i=0 TO 15: READ j: INK i,j: NEXT [42]
1650 DATA 13,0,1,2,5,11,3,9,10,18,21,19,20,23,24,26 [13]
1660 RETURN [79]
1670 ' [A2]
1680 ' Sub 3: print menu data [A5]
1690 xcol=10: yrow=18: LOCATE xcol,yrow: PRINT "I:";RIGHT$(STR$(1000+iseed),3);"
 S:";RIGHT$(STR$(1000+lseed),3); [3C]
1700 LOCATE xcol,yrow+1: PRINT "L:";RIGHT$("   "+STR$(level),3);" ";CHR$(69+4*au
```

Program 1.

```
toelev);":";RIGHT$("   "+STR$(elev-sealevel),3) [B1]
1710 LOCATE xcol,yrow+2: PRINT "X:";RIGHT$("   "+STR$(xposn),3);" Y:";RIGHT$("
 "+STR$(yposn),3); [ED]
1720 LOCATE xcol,yrow+3: PRINT "W:";: IF pfill=0 THEN PRINT "Wire  ": ELSE IF pf
ill=1 THEN PRINT "Solid"; ELSE PRINT "Mixed"; [1F]
1730 LOCATE xcol,yrow+4: PRINT "C:";: IF contor=0 THEN PRINT "Contor";:ELSE PRIN
T "Shaded"; [10]
1740 LOCATE xcol,yrow+5: PRINT "B:";: IF showsea=0 THEN PRINT "Below Sea";: ELSE
 IF showsea=1 THEN PRINT "Fill Sea "; ELSE PRINT "No Sea   "; [55]
1750 LOCATE xcol,yrow+6: PRINT "Frame:";RIGHT$(STR$(1000+frm),3); [09]
1760 RETURN [7B]
1770 ' [A4]
1780 ' Sub 4: calculate new fractals [A7]
1790 |WIPE [5D]
1800 ORIGIN 0,0,0,640,400,0: |GPEN,1: MOVE x1,y1: DRAWR 264,0: DRAWR 0,132: DRAW
R -264,0: DRAWR 0,-132: MOVE x1-4,y1-2: DRAWR 272,0: DRAWR 0,136: DRAWR -272,0:
DRAWR 0,-136 [D4]
1810 ORIGIN x1+4,y1+2,x1,639,399,y1: MOVE x1,y1 [5D]
1820 a1=INT(RND*128)+tilt1: a2=INT(RND*128)+tilt2: a3=INT(RND*128)+tilt3: a4=INT
(RND*128)+tilt4 [93]
1830 st=0: p1=1: xsize=size: ysize=size: GOSUB 1890 ' prime corners [FE]
1840 |FRACTAL,1 ' calculate Fractal [71]
1850 newimage=false: curon=false: GOSUB 2120 [34]
1860 RETURN [7D]
1870 ' [A6]
1880 ' Sub 5: prime corners [A9]
1890 |STORE,0    ,st    ,a1,p1 [70]
1900 |STORE,0    ,ysize,a2,p1 [27]
1910 |STORE,xsize,st    ,a3,p1 [D2]
1920 |STORE,xsize,ysize,a4,p1 [33]
1930 RETURN [76]
1940 ' [9F]
1950 ' Sub 6: load up  and log on RSX Code [A2]
1960 a$="Fractal Generator": addr=&9100: addr=VAL("&"+HEX$(PEEK(addr+2),2)+HEX$(
PEEK(addr+1),2))+4 [CB]
1970 addr=VAL("&"+HEX$(PEEK(addr+1),2)+HEX$(PEEK(addr),2)) [0F]
1980 addr=VAL("&"+HEX$(PEEK(addr+1),2)+HEX$(PEEK(addr),2))-1 [2D]
1990 no=false: FOR i=1 TO LEN(a$)-1 [78]
2000  IF MID$(a$,i,1)<>CHR$(PEEK(addr+i)) THEN no=true [A7]
2010 NEXT i [F3]
2020 IF no=true THEN LOAD "fra-a.bin",&9100 [09]
2030 CALL &9100 [2B]
2040 RETURN [68]
2050 ' [91]
2060 ' Sub 7: remove cursors [94]
2070 IF curon THEN GOSUB 2120 ' turn off cursors [34]
2080 IF j$="N" THEN currs=NOT currs: p=pmax [01]
2090 RETURN [77]
2100 ' [84]
2110 ' Sub 8: draw cursors [87]
2120 IF NOT currs THEN GOTO 2190 [DC]
2130 xxx=xposn: IF xxx<0 THEN xxx=-1 ELSE IF xxx>64 THEN xxx=65 [CE]
2140 yyy=yposn: IF yyy<0 THEN yyy=-1 ELSE IF yyy>64 THEN xxx=65 [1C]
2150 ORIGIN x1,y1,0,639,399,0 [A0]
2160 |GPEN,curcolour,1: MOVE 4+xxx*4,0: DRAWR 0,132: MOVE 0,2+yyy*2: DRAWR 266,0
 [60]
2170 |GPEN,1,0: MOVE 0,0: ORIGIN 0,0,xstart,xend,yend,ystart [A1]
2180 curon=NOT curon [F4]
2190 RETURN [79]
2200 ' [86]
2210 ' Sub 9: get keyboard options [89]
2220 p=0: ptop=3: pmax=ptop+1 [00]
2230 WHILE p<=pmax [DA]
2240  i$="": WHILE i$="": i$=INKEY$: WEND [2F]
2250  j$=UPPER$(i$): i=ASC(i$) [39]
2260  p=1 [8B]
2270  IF j$="Q" THEN 2320 [33]
2280  WHILE p<=ptop [B7]
2290   ON p GOSUB 2350,2450,2520: p=p+1 [71]
2300  WEND [49]
2310 WEND [4C]
2320 RETURN [68]
2330 '  [91]
2340 ' Sub 9.1: cursor moves [94]
2350 dxp=(i=242)+10*(i=246)+30*(i=250)-(i=243)-10*(i=247)-30*(i=251) [3D]
2360 dyp=(i=241)+10*(i=245)+30*(i=249)-(i=240)-10*(i=244)-30*(i=248) [AB]
2370 dzp=(i$="d")+10*(i$="D")+100*(i=4)-(i$="u")-10*(i$="U")-100*(i=21) [48]
2380 GOSUB 2070 ' remove cursors [96]
```

```
2390 IF dyp<>0 OR dxp<>0 OR dzp<>0 THEN p=pmax: redraw=true: yposn=yposn+dyp: xp
osn=xposn+dxp: elev=elev+dzp [87]
2400 IF yposn>63 THEN yposn=63: ELSE IF yposn<-63 THEN yposn=-63 [3B]
2410 GOSUB 2590: IF NOT curon THEN GOSUB 2120 ' auto elevation: if cursor off th
en turn it on [1D]
2420 RETURN [6A]
2430 ' [93]
2440 ' Sub 9.2: seed changes [96]
2450 IF i$="i" THEN iseed=(iseed+  1) MOD 1000: newimage=true: p=pmax [77]
2460 IF i$="I" THEN iseed=(iseed+999) MOD 1000: newimage=true: p=pmax [D3]
2470 IF i$="s" THEN lseed=(lseed+  1) MOD 1000: newimage=true: p=pmax [92]
2480 IF i$="S" THEN lseed=(lseed+999) MOD 1000: newimage=true: p=pmax [EE]
2490 RETURN [7F]
2500 ' [8C]
2510 ' Sub 9.3: level changes [8F]
2520 IF i$="l" THEN level=(level*2): p=pmax: IF level>64 THEN level=1 [54]
2530 IF i$="L" THEN level=(level\2): p=pmax: IF level<1 THEN level=64 [ED]
2540 IF p=pmax AND drawit THEN redraw=true [DA]
2550 GOSUB 2590 [EE]
2560 RETURN [78]
2570 ' [A1]
2580 ' Sub 9.6: auto elevation [A4]
2590 IF j$="A" THEN autoelev=NOT autoelev: oldelev=elev: p=pmax [8F]
2600 IF NOT autoelev THEN GOTO 2670 [92]
2610 IF dzp<>0 THEN autoelev=NOT autoelev [00]
2620 IF p<>pmax OR xposn<0 OR xposn>64 OR yposn<0 OR yposn>64 THEN GOTO 2670 [02]
2630 a=0: ma=-1: xxx=xposn-(xposn MOD base): yyy=yposn-(yposn MOD base): FOR i=-
base TO base STEP base: FOR j=-base TO base STEP base [76]
2640 xx=i+xxx: yy=j+yyy: IF xx>=0 AND xx<=64 AND yy>=0 AND yy<=64 THEN |GET,xx,y
y,@a: ma=MAX(a,ma) [C0]
2650 NEXT j,i [BB]
2660 IF ma<>-1 THEN elev=ma+2: redraw=true: IF showsea<>0 AND elev<sealevel THEN
 elev=sealevel+2 [D4]
2670 RETURN [7D]
```

expansion of last month's program and introduces a keyboard scan loop for changing certain parameters around the system. The keyboard options so far are as follows:

[cursors-keys]: Move over the landscape, [SHIFT] will step 10 and [CONTROL] steps 30.

[U] and [D]: Move up and down, [SHIFT] moves 10 and [CONTROL] moves 100.

[A]: Switches between auto and manual elevation. In auto, the elevation is set to 2 units above the surrounding landscape. [U] and [D] will turn off auto.

[S] and [I]: These keys add 1 to the two seed values; shifting the keys subtracts 1.

[N]: Turns cursor ON and OFF.

[Q]: Quit.

The screen area is divided into 3 sections: the main image area where the landscape will be projected; the contour map area; and the data area that displays some of the more relevant landscape data.

The information shown in this last screen areas is as follows:

I: The Image Seed

S: The Corner Seed

These describe each landscape. Changing "I" affects the entire image, producing drastic changes in the landscape; "S" only alters the four corners, producing more subtle changes. In

```
1000 ' m/code loader for file:FRA-A.BIN [81]
1010 ' [84]
1020 ' by DEANCRACKNELL1988 [87]
1030 ' [8A]
1040 MEMORY &90FF [96]
1050 llen=&667: strt=&9100: nm$="FRA-A.BIN" [EB]
1060 lsum=0: csum=0: lnum=3000: ii=0 [1F]
1070 READ a$: amp$=CHR$(38): PRINT "Creating ";nm$;" ": [24]
1080 WHILE a$<>"####" [B3]
1090  FOR ai=1 TO LEN(a$) STEP 2: PRINT CHR$(212+(ai MOD 4));CHR$(8); [33]
1100   aa=VAL(amp$+MID$(a$,ai,2)): POKE strt+ii,aa: lsum=lsum+aa: ii=ii+1 [8D]
1110  NEXT ai: GOSUB 2000 [80]
1120  READ a$ [3F]
1130 WEND: PRINT " " [57]
1140 READ a$: ccsum=VAL(amp$+a$) [A8]
1150 IF ccsum<>csum THEN PRINT "ERROR in Final C/SUM": END [72]
1160 PRINT "All Code correct, saving to disc" [A8]
1170 SAVE "!"+nm$,b,strt,llen [67]
1180 END [3B]
2000 ' line checksum [82]
2010 READ a$: llsum=VAL(amp$+a$) [B5]
2020 IF llsum<>lsum THEN PRINT " C/SUM ERROR in LINE";lnum: END [B2]
2030 csum=(csum MOD &7000)+lsum: lnum=lnum+10: lsum=0 [30]
2040 RETURN [68]

3000 DATA c392960600fe0328,31a [CD]
3010 DATA 0afe04c0dd4600dd,3cc [EA]
3020 DATA 23dd2378324b9ddd,392 [D1]
3030 DATA 6e04260054ebdd6e,322 [3E]
3040 DATA 02e5d5cd37947edd,4af [C1]
3050 DATA 6e00dd660177d1e1,3db [6A]
3060 DATA cd1a95c90600fe03,34c [C3]
3070 DATA 280afe04c0dd4600,317 [CE]
3080 DATA dd23dd2378324b9d,392 [25]
3090 DATA dd6e04260054ebdd,391 [EF]
3100 DATA 6e02e5d5cd3794dd,49f [3A]
3110 DATA 7e0077d1e1cd1a95,423 [0C]
3120 DATA c9fe002803dd7e00,34d [8B]
3130 DATA 21008011018001c2,1f6 [D8]
3140 DATA 1077edb0c9fe01c0,4nc [25]
3150 DATA 21099daf7723dd7u,36b [9C]
3160 DATA 007723dd7e0177c9,336 [A6]
3170 DATA fe022005dd7e0218,29a [B9]
3180 DATA 05fe01c03effcda3,471 [E0]
3190 DATA 91dd6e00dd660173,393 [87]
3200 DATA 2372c9110000fe00,26d [54]
3210 DATA c8f5cdcf913e00bc,4e4 [AC]
3220 DATA 28f825cb7df56c26,414 [B8]
3230 DATA 00f1d15a54f5cd59,48b [76]
3240 DATA 94f17b2809fe0028,357 [32]
3250 DATA 05ed445f16ffc92a,39d [3B]
3260 DATA 099d3e00110100cb,1c1 [B8]
3270 DATA 742001abcb5c2001,288 [78]
3280 DATA abcb452001ab295f,30f [BB]
3290 DATA 7ce67f671922099d,329 [5B]
3300 DATA c90600fe03280afe,300 [10]
3310 DATA 04b0dd4600dd23dd,3c4 [0C]
3320 DATA 2378324b9d0600dd,298 [0D]
3330 DATA 4e00dd6e046054eb,33c [C9]
3340 DATA dd6e02cd1792c9ed,479 [EF]
3350 DATA 430d9d7d32119d7b,2c5 [D5]
3360 DATA 32129debcd37947e,3e2 [EC]
3370 DATA 32139de5ed5b0d9d,3b9 [19]
3380 DATA cb2acb1bed530f9d,3c7 [10]
3390 DATA 19221d9d197e3215,1d3 [CF]
3400 DATA 9d2a0f9d110000cd,251 [B4]
3410 DATA 3f94d1eb19e52219,3c8 [9F]
3420 DATA 9d197e32169ded5b,361 [AF]
3430 DATA 0f9d19221f9d197e,23a [B7]
3440 DATA 32149de11922179d,2b3 [50]
3450 DATA 19221b9dcd7092c9,38b [BB]
3460 DATA 110000ed530b8dfd,2f6 [AB]
3470 DATA 21219d3a169dfd77,340 [99]
```

Program 2.

```
3480 DATA 003a139dfd77013a,299 [7B]
3490 DATA 0f9dfd77023e00fd,35d [FG]
3500 DATA 77032a199dcd5193,30b [21]
3510 DATA 110000fd21219d3a,227 [33]
3520 DATA 149dfd77003a159d,311 [D2]
3530 DATA fd77013a0f9dfd77,3cf [61]
3540 DATA 023a0d9dfd77032a,287 [48]
3550 DATA 1b9dcd5193110000,27a [5F]
3560 DATA fd21219d3a159dfd,3c5 [12]
3570 DATA 77003a139dfd7701,2d6 [37]
3580 DATA 3e00fd77023a0f9d,29a  [0E]
3590 DATA fd77032a1d9dcd51,379 [18]
3600 DATA 93110000fd21219d,280 [AE]
3610 DATA 3a169dfd77003a14,2af [89]
3620 DATA 9dfd77013a0d9dfd,3f3 [13]
3630 DATA 77023a0f9dfd7703,2d6 [02]
3640 DATA 2a1f9dcd51931100,2a8 [C2]
3650 DATA 002a179d7efe0020,27a [5A]
3660 DATA 3f2a0b9dcb2ccb1d,2f0 [18]
3670 DATA cb2ccb1de53a0d9d,3a8 [25]
3680 DATA 87cda391e119afcb,4fc [04]
3690 DATA 7c2008bc28043eff,2c9 [A3]
3700 DATA 18017d2a179d77f5,2e0 [01]
3710 DATA 3a129d6f3a119d5f,29f [30]
3720 DATA 2600543a0f9df585,2da [A4]
3730 DATA 6ff1835ff1cd1a95,4af [B5]
3740 DATA c97efe00203fe5fd,486 [6F]
3750 DATA 4600fd7e01801f6f,2d0 [5C]
3760 DATA af67e53a0d9d87cd,433 [AB]
3770 DATA a391e119afcb7c20,444 [2F]
3780 DATA 08bc28043eff1801,246 [9F]
3790 DATA 7de177f53a129d6f,422 [82]
3800 DATA 3a119d5f260054fd,2be [B6]
3810 DATA 7e02856ffd7e0383,375 [57]
3820 DATA 5ff1cd1a955f1600,341 [29]
3830 DATA 2a0b9d19220b9dc9,27e [37]
3840 DATA fe012003dd7e0032,2af [10]
3850 DATA 4b9d014000ed4327,280 [E0]
3860 DATA 9d210000e5d1c5cd,406 [5D]
3870 DATA 1792c179fe02382d,348 [E3]
3880 DATA 282bafcb19ed5b27,355 [D7]
3890 DATA 9daf7b915fed5329,420 [AB]
3900 DATA 9dd52a299de5d5c5,4e1 [92]
3910 DATA cd1792c1d1e1af7d,515 [6C]
3920 DATA 916f30f1d1af7b91,4ad [B7]
3930 DATA 5f30e618cec9fe01,423 [0E]
3940 DATA c0dd5e00dd560101,330 [3B]
3950 DATA 8110210080edb0c9,398 [F4]
3960 DATA fe01c0dd7e00cde4,4cb [FE]
3970 DATA bbc9dde5fe01280d,47a [6F]
3980 DATA fe02c0dd7e00cd59,441 [D3]
3990 DATA bcdd23dd23dd7e00,417 [D2]
4000 DATA cddebbdde1c93ec0,5eb [0E]
4010 DATA 18043e401800cd08,187 [55]
4020 DATA bc210000c305bccd,32e [98]
4030 DATA 3f9411008019c9d5,31b [61]
4040 DATA e506062910fdd119,311 [76]
4050 DATA d119e511c210afed,44e [9C]
4060 DATA 52e1fa589421c210,40c [E2]
4070 DATA c97a570610297a8a,2dd [34]
4080 DATA 5793fa67942c5710,372 [96]
4090 DATA f45a50c97b010008,2eb [64]
4100 DATA eb6169298f300219,2b8 [DF]
4110 DATA 8910f85857c9f5c5,4c3 [C5]
4120 DATA 06003e00cb7c2805,1b8 [B9]
4130 DATA cdfc94cbc0cb7a28,555 [34]
4140 DATA 07ebcdfc94ebcbc7,5cc [3B]
4150 DATA b82004cb871802cb,313 [EB]
4160 DATA c7324a9d7832499d,370 [95]
4170 DATA 1600cd59943a499d,2f0 [E1]
4180 DATA cb472805ebcdfc94,487 [E4]
4190 DATA eb3a4a9dcb472803,349 [EF]
4200 DATA cdfc94c1f1c9f5c5,692 [4C]
4210 DATA 06003e00cb7c2805,1b8 [B8]
4220 DATA cdfc94cbc0cb7a28,555 [33]
4230 DATA 07ebcdfc94ebcbc7,5cc [3A]
4240 DATA b82004cb871802cb,313 [EA]
4250 DATA c732499dcd6c943a,3e6 [3E]
4260 DATA 499dcb472803cdfc,3ec [3A]
4270 DATA 94c1f1c9d5eb2100,4f0 [69]
4280 DATA 00a7ed52d1c91100,391 [7A]
4290 DATA 0019280d110100cb,12b [8E]
4300 DATA 7c280611ffffcdfc,482 [AD]
4310 DATA 94c9f53a4b9dfe00,472 [A2]
4320 DATA 2820a7cb13cb12a7,351 [85]
4330 DATA cb13cb1218072005,1ff [CC]
4340 DATA a7cb13cb12a7cb15,3e9 [37]
4350 DATA cb14f1f5cd4495cd,538 [0F]
4360 DATA eabbf1c9cb1fcb1f,533 [D1]
4370 DATA cb1fcb1fcddebbc9,503 [63]
4380 DATA c54f3a2b9dfe0028,33c [14]
4390 DATA 073e5f9138020e5f,1dc [E8]
4400 DATA 79c1c9c5473a2d9d,413 [3B]
4410 DATA fe0078c12805cd77,3a8 [36]
4420 DATA 951803cd4495c947,366 [89]
4430 DATA 0e022a139d5c2600,16c [46]
4440 DATA 5419e52a159d5c26,2b0 [BC]
4450 DATA 005419d1a7ed5238,35c [72]
4460 DATA 020c0c2a149d5c26,177 [3A]
4470 DATA 005419e53a139d62,29e [84]
4480 DATA 6f3a169d5f19d1a7,34c [06]
4490 DATA ed5230010c21139d,24d [1E]
4500 DATA 78be200e23be200a,26f [8B]
4510 DATA 23be200623be2002,20a [C3]
4520 DATA 0e06fe5f28083808,1e1 [21]
4530 DATA 3e04814f18020e02,13c [18]
4540 DATA 79cddebbc9cdd5bb,605 [0C]
4550 DATA ed53889d228a9dcd,47b [C9]
4560 DATA d8bbed538c9d228e,4ac [4C]
4570 DATA 9dc9af010000ed5b,35e [C7]
4580 DATA 889d2af79ccd7b96,4c0 [DC]
4590 DATA 2afb9ccd7b962aff,4c8 [40]
4600 DATA 9ccd7b962a039dcd,411 [C9]
4610 DATA 7b964ffe0fc82a8a,3e9 [8B]
4620 DATA 9ded5bf79ccd7b96,556 [FA]
4630 DATA ed5bfb9ccd7b96ed,5aa [C5]
4640 DATA 5bff9ccd7b96ed5b,51c [C0]
4650 DATA 039dcd7b964fe60f,3c2 [25]
4660 DATA fe0fc878ed5b8e9d,4c0 [48]
4670 DATA 2af99ccd7b962afd,4c4 [52]
4680 DATA 9ccd7b962a019dcd,40f [CE]
4690 DATA 7b962a059dcd7b96,3bb [47]
4700 DATA 47fe0fc82a8c9ded,45c [C8]
4710 DATA 5bf99ccd7b96ed5b,516 [FD]
4720 DATA fd9ccd7b96ed5b01,4c0 [D5]
4730 DATA 9dcd7b96ed5b059d,465 [10]
4740 DATA cd7b9647e60ffe0f,427 [70]
4750 DATA c878c9e5a7ed52e1,5b5 [BB]
4760 DATA 17c9fde1fd36fa00,4eb [49]
4770 DATA fd36fb00fd36fc00,45d [5A]
4780 DATA fde921319701b196,417 [69]
4790 DATA cdd1bccd82963a67,4e0 [60]
4800 DATA 97fe33c021ef9701,430 [DA]
4810 DATA 3597cdd1bccd8296,50b [50]
4820 DATA c9da96c3b096c303,508 [43]
4830 DATA 91c33491c36191c3,491 [DD]
4840 DATA 7591c38891c3f191,527 [42]
4850 DATA c3a093c3ee93c300,4fd [F6]
4860 DATA 94c30a94c32694c3,435 [0F]
4870 DATA 2a94467261637461,30f [2A]
4880 DATA 6c2047656e657261,2de [C9]
4890 DATA 746ff24745d45354,3dc [34]
4900 DATA 4f52c5574950c553,36e [DC]
4910 DATA 4545442e52414ec4,2a1 [FA]
4920 DATA 52414e444fcd5349,2dd [49]
4930 DATA 4e474cc546524143,2c2 [5C]
4940 DATA 5441cc434f50592e,2ca [17]
4950 DATA 465241435441cc47,2c4 [DF]
4960 DATA 50415045d2475045,2d4 [85]
4970 DATA ce484947c84c4fd7,3e0 [D0]
4980 DATA 0000000000006797c3,1c1 [23]
4990 DATA b096c3f397c36498,552 [D1]
5000 DATA c3349ac3aa98c3d7,530 [73]
5010 DATA 99c39f9cc3a69cc3,55f [A9]
5020 DATA ad9cc3b49cc3c99c,584 [38]
5030 DATA c3bb9cc3c29cc398,596 [F8]
5040 DATA 9cc3d09cc3d79c,501 [C0]
5050 DATA "####",4abc [22]
```

theory these two numbers can generate 17,592,186,044,416 different landscapes [i.e. 128 x 128 x 128 x 128 (corners) x 65536 (images)], but in order to allow the two seeds to be displayed, this total has been restricted to 1,000,000.

L: Current Level

E: Current Elevation

"L" determines the resolution level that the projected image will have (from 2,8,16,32 or 64) "E" is the elevation of the viewer above (or below!) the landscape. In "AUTO" mode the "E" changes to and "A" and shows the average height of the surrounding cells.

X: Current X-position

Y: Current Y-position

The following are for the image projection and will be covered in more detail next month.

W: Wire, Solid or Mixed Drawing – mixed is wire-framed solid.

C: Contour or Shaded Display.

B: Show Below Sea Level, Draw Sea, or Fill Sea.

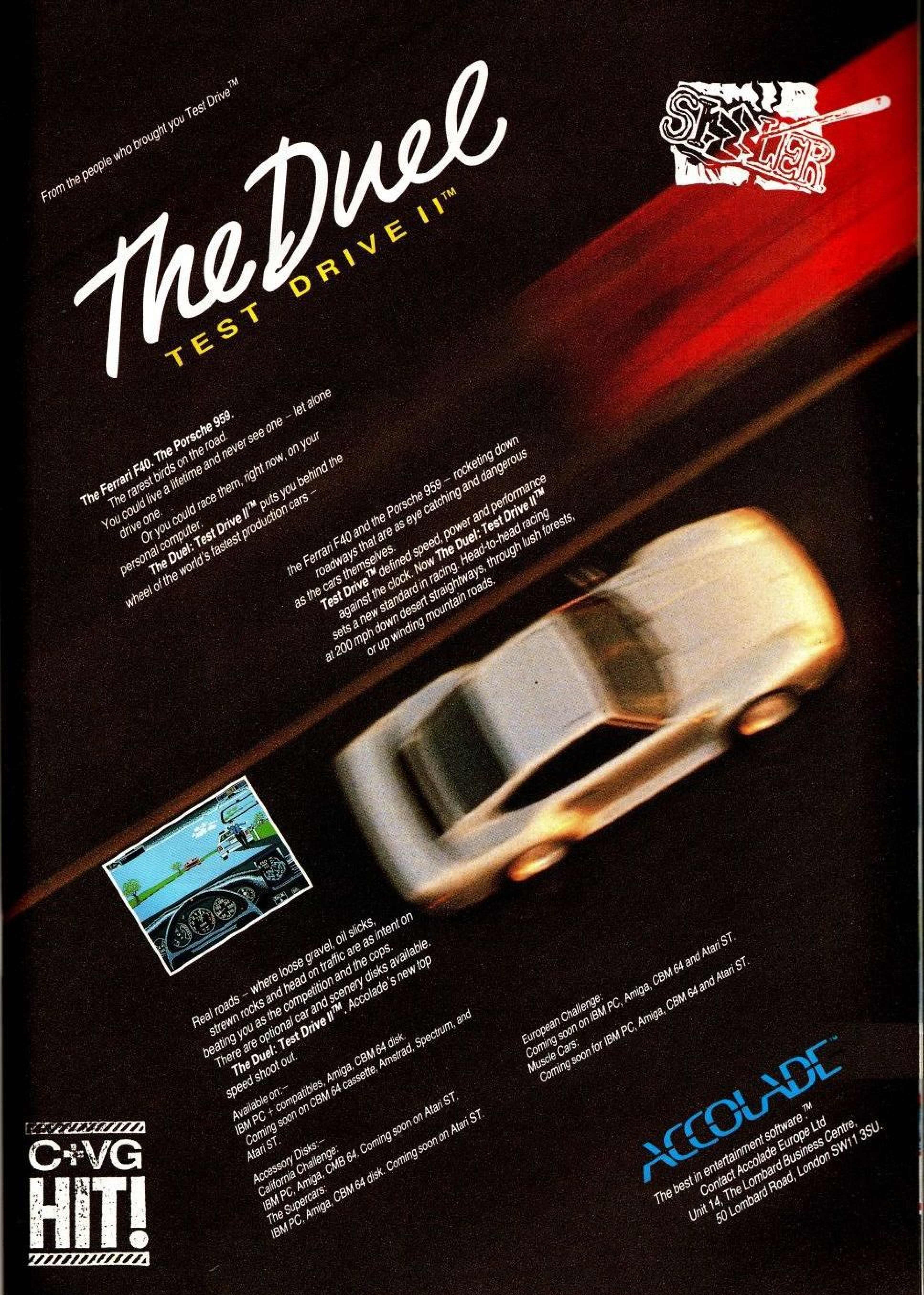
Frame: Frame Number to save to Disc/Cassette.

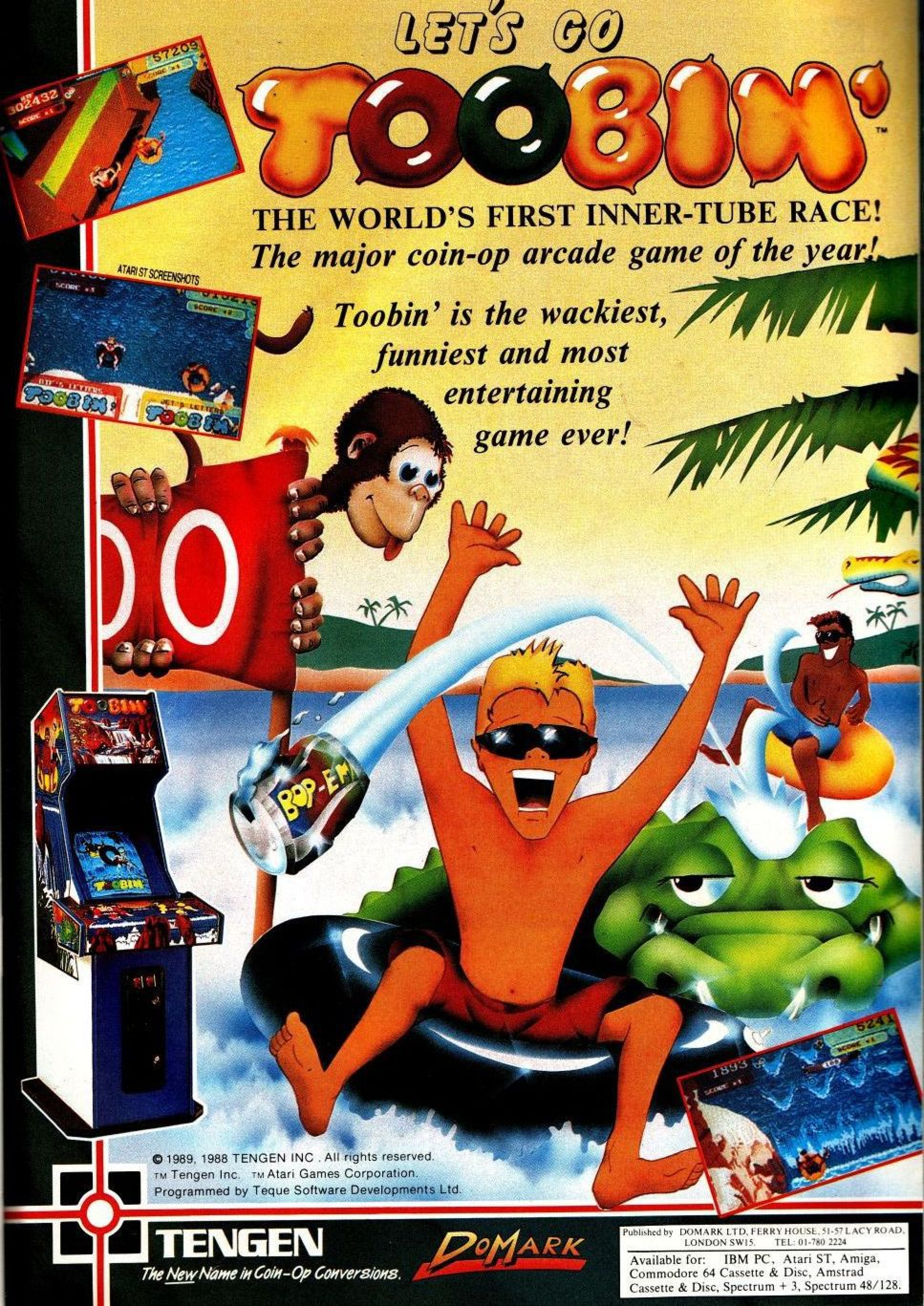
Time: The time taken to perform the option, in seconds.

If you wish to experiment with what we have so far, make a copy of the program and work on that, (you will need the unaltered version next month). Subroutine 5 from last month can be readily added for isometric projections; the 4 variables – tilt1, tilt2, tilt3 and tilt4 – will 'tilt' the corners of the fractal. In the program these are preset to tip the landscape towards the viewer, but can be changed to alter the landscape to any angle. Setting other locations within the map, using :STORE,x,y,value,1 will allow you to preset other parts of the landscape: for example, making all tilt variables zero and setting the centre to a value (eg :STORE,32,32,100,1) will create islands.

The next instalment gets down to the nitty-gritty of 3-D image projection (you will not need the special red and blue glasses, it is not that kind of 3-D projection), and adds the finishing touches to the Landscape Generator.●




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Order Codes Tasword 464D TASW0002. Tasword 6128 TASW0001.



Time to go on-line

Gordon Bates steps from the shadows to bring you 'Comms Made Easy – Part II'

After last month's introduction to communications, you will have a fair idea of how to communicate with each other via the phone lines, and I hope you will have seen how easy it is to do.

You will not be too mind-boggled then by some of the articles you see written in 'black art' style. So, now that you have got the modem, serial interface, and software all hooked up and ready to go, where are you going to dial? One of the biggest on-line services you might want to look at is Prestel, with its computer-specific magazine, *Micronet*.

Unlike the majority of bulletin boards dotted around the country, Prestel is a Viewdata service. This means that it requires software capable of displaying its graphics and colours. Basically, it has a 40-column, 23-line screen, and up to 8 colours, in either text or graphics. Flashing colours are also used. This means that the normal CPC 40-column mode cannot handle Viewdata and show all of its colours, and mode 0, although it can handle the colours, cannot cope with the number of characters per line used by the Prestel system. Even so, there are some very good emulations available (see jargon box).

So, what does Prestel offer? To answer that would take more space than I have here; but there is a wide range of articles and magazines available to cover almost every interest, from Angling to Zen, and Aircraft to Yachting.

Probably one of the most useful aspects of the system is its messaging facility known to one and all as *Mailbox*. Each subscriber has his (or her) own private pigeon hole for electronic mail, and can send a message to any of the thousands of other subscribers who use the system.

Prestel have recently revamped the messaging to make it much more powerful than it was before, so you can now send the same message to many recipients at the press of a key, store mail to be read later, forward a message to someone else after you yourself have read it (great for gossiping!), and more. I will look at Mailbox in more depth in a month or two.

Prestel also offers access to up-to-the minute news, both general and specific, and can allow you access through gateways to other computers, run by other organisations. You can, if you want (at an extra charge), check your share portfolio, and see how deals made only a few minutes before have affected it – useful if you are a yuppie!

Finding your way around all this is easy. You are either given a 'route' to follow, by keying a number, or you can use 'keywords'. Typing '*Micronet#', for instance, would take you to the computer magazine of that name.

Micronet itself is a database of over 3,500 pages of information, news reviews, and chat, all specifically geared to the computer user. Within the main magazine it has magazines to cover all of the popular computers (and even some that are not), and one of interest to Amstrad users in particular.

This is called the *Amster's Cage*, and is edited by none other than our own agony uncle, David Dorn, assisted by Vince Merrell. The 'Cage', as it has become known, includes reviews, features, and some of the liveliest letters to be found in any magazine. If you were to send a letter to the Cage, the chances are that a reply would appear the next night, nicely presented, just like the letters in your favourite magazine.

That is not all, though. Quite often, the Cage letters are visited not only by Cliff Lawson and Roland Perry, two of the technobods from Amstrad itself (although they do this in a private capacity), but also Richard Clayton, of

Locomotive, and David Foster, ex-Applications Advice columnist. Phil Craven is to be seen regularly writing in to the Cage as well and you will even see my name appearing there from time to time. Nor is it unusual for contributors to other magazines to appear there occasionally (does anyone know a guy called Pat McDonald?).

As you can see, the Cage can be a very good source of information 'straight from the horse's mouth'. After all, you have got access to a pretty good panel either to answer any of your questions, or just to debate one of the many subjects that crop up – not always to do with CPCs either.

Micronet also has a very fast news service; it is more than likely that a story breaking on any day will find its way onto the Micronet News by six o'clock the same day. And it is all specifically computer-related. Some of the most respected names in the business write for the 'net, including comms guru Steve Gold, a daily columnist on the system. He writes the Micromouse industry gossip/news column, which is addictive reading for most 'netters. If it is new, you will read about it in Steve's column.

There are sections covering leisure interests too. One in particular, called *Xtra*, is edited by ex-Spectrum games reviewer par excellence Chris Bourne (those of you who came to the CPC via the Spectrum may remember him as Gremlin).

Xtra covers all kinds of leisure and general interest topics, and features a wicked gossip column, under the name of *Slasher* – fascinating reading, and one I never miss!

Scattered around the Micronet part of Prestel are chat-lines. These are totally interactive 'CB'-like areas, where any number of 'netters can get together to chat, argue, debate, or whatever. Believe it or not, marriages have taken place as a result of friendships originating on the chat-lines and on the MUG (Multi-User Game) that Micronet hosts, *Shades*.

The adventure game fans amongst you will flip over Shades. It is truly multi-user, with computer-controlled characters, as well as having other players with which to interact. I have to admit that I do not get as much time to play it as I would like, but it is very popular indeed.

I mentioned gateways earlier, and one of the most useful of these is the *Gateway to Gold*, which you can use to access *Telecom Gold*, the scrolling E-mail service. More of that in another column. One of the other gateways peculiar to Micronet takes you to a computer called *Orson*, with its satellites *Mork* and *Mindy* (don't ask – some of the Micronet staff are a little weird!).

Orson is the Telesoftware computer, from which you can dowload free software onto disc. There are all kinds of programs available, from serious stuff (including free comms software) to decidedly frivolous programs, with some pretty good games in between. The software is added to regularly, and would probably fill a fair few discs as it stands already.

So, Micronet has plenty to offer the CPC user, but how much does it all cost? Well, firstly, there is the annual subscription charge (which includes access to Prestel), of £79.95 plus VAT. Paying a year's subs in advance will earn you a free modem, which is no bad bargain!

On top of that, there are time charges, which work on a sliding scale. Between 8 a.m. and 6 p.m. it costs 7p per minute to log on to the system; from then until 12 p.m., for Micronet pages only, the time charges are waived, although the 1p per minute still applies to other Prestel pages. Some Prestel pages (and very few Micronet pages) also carry a 'frame charge'; this varies but ranges from 1p upwards. You cannot just stray on to these if you use the menuing system, though, as such pages carry a warning before you get to them, so you need not access them if you do not want to. Talking about access, all phone calls to the Prestel system are local, which means that local phone charges apply. This works out at around 50p per hour, including VAT, so an hour on the system after six and before midnight will cost you less than a pint of lager in a London pub! Not bad value, is it?

Of course, if you are a night owl (and many 'netters are), you need only pay the phone charge, which makes for cheap entertainment. Using the new Mailbox system is free, if you only send one-frame messages and do not request some of the knobs and whistles when you send them; each knob or whistle, however, puts a penny per time on to your bill.

To give you some idea of how much it costs per week for someone to log on every day for an hour, and to use the messaging services frequently (as I do), my weekly bill would be somewhere around £10, not including the phone costs. Bear in mind, though, that I use the system extensively, probably more than the average subscriber.

Contacts:
Micronet,
Dialcom House,
Brindley Way,
Apsley,
Hemel Hempstead,
Hertfordshire.
Phone: 0800 200 700

For a demo, set your software to Viewdata, and dial 0272 250000. Use the ID 4444444444 and the password 4444. Once you are on-line, you can look up the number of your local access point.

Jargon Box

EMULATION

Any computer that is not directly compatible with another may be capable of emulating it – or looking like it on-screen – and acting in the same, or a similar way. Thus, a Viewdata emulation involves using the CPC to look like a Prestel computer, even though, ordinarily, you would not use your CPC to work in this way.

ID AND PASSWORD

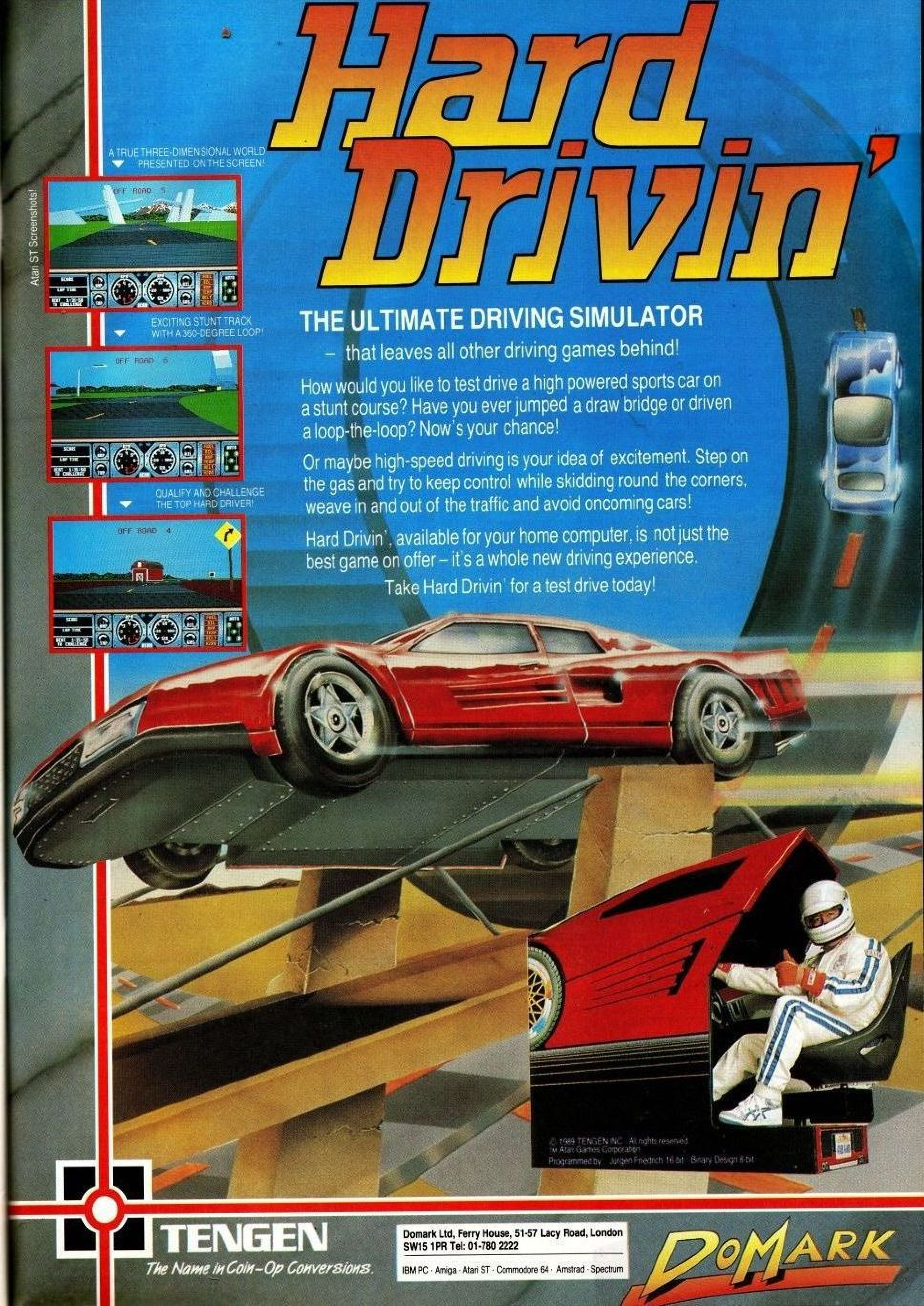
On-line systems, like Prestel, that make a charge for their use, must offer protection to their subscribers' finances! So, when you wish to access the system, you must identify yourself uniquely to the computer, so that it knows who to bill. Your ID and Password are unique to you, so you should never let anyone else use them.

FRAME

A Prestel frame is 40 columns by 23 lines, and contains 960 characters. Each frame is wiped from the screen before the next is displayed.

SCROLLING SYSTEMS

A scrolling system normally uses an 80-column screen, and scrolls text and graphics (minimal on the CPC) from the bottom to the top, much like a listing scrolls up the screen. Thus, unlike Viewdata, one page of information is not cleared before the next lot appears.



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